

ADDITIONAL

 PIONEER

Service Manual

ORDER NO.
HRT-246-0

WATERPROOFING REPAIR MANUAL

PK-5AW

PK-R7AW

- To prevent water leakage, be sure to assemble following the directions beginning on page one.
- Perform the air leakage test on page 4 (using the GGF-025) to check for water leakage.
- To repair a leak, refer to the troubleshooting guide beginning on page 5.

THE FOLLOWING JIG, TOOLS AND MATERIALS ARE REQUIRED FOR REPAIR SERVICE.

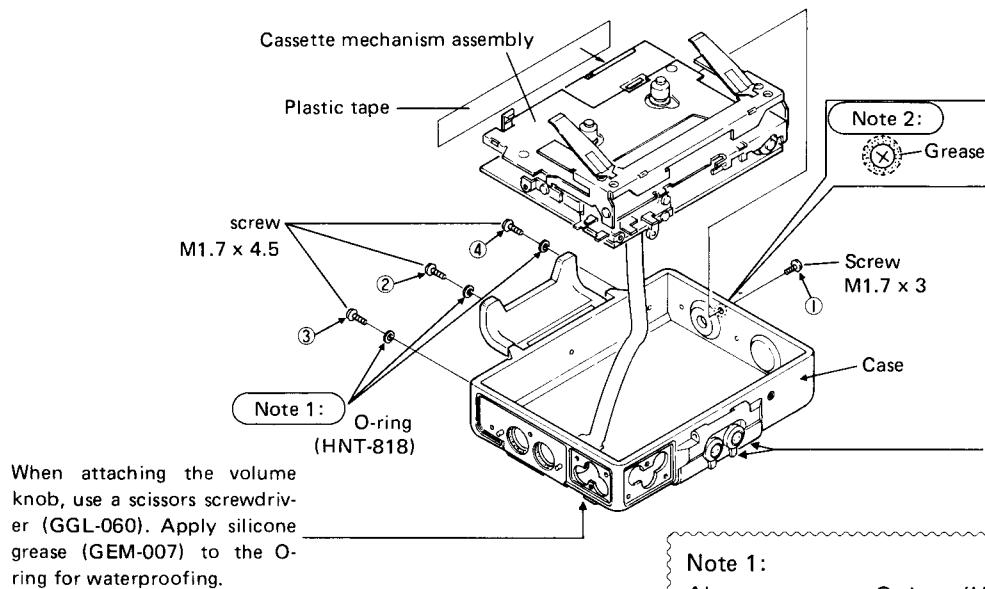
PARTS NO.	DESCRIPTION
GGF-025	Water leak checker (Special jack with vinyl tube)
GGL-060	Crab-type screwdriver
GGL-061	Crab-type screwdriver
GGK-081	Grip with chuck for screwdriver
GYL-015	Silicone based adhesive
GEM-006	Silicone grease for fixed components
GEM-007	Silicone grease for movable components

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PIONEER ELECTRONICS (USA) INC. P.O. Box 1760, Long Beach, California 90801 U.S.A.
PIONEER ELECTRONIC (EUROPE) N.V. Keetberglaan 1, 2740 Beveren, Belgium
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● ASSEMBLY PROCEDURE

1. Attaching the cassette mechanism assembly to the case.



When attaching the knobs, use a scissors screwdriver (GGL-061). When assembling, be sure the positions of the knobs are aligned with those of the switches. Apply silicone grease (GEM-007) to the O-ring for waterproofing.

Fig. 1

- 1) The four screws holding the assembly in the case should be tightened in order from one to four as numbered in the diagram.

Note 1:

Always use new O-rings (HNV-818) on screws ②, ③ and ④. (Replace all polyester washers with O-rings.)

Note 2:

After tightening screw ①, apply silicone grease (GEM-006) to the area around the screw.

2. Attaching the escutcheon.

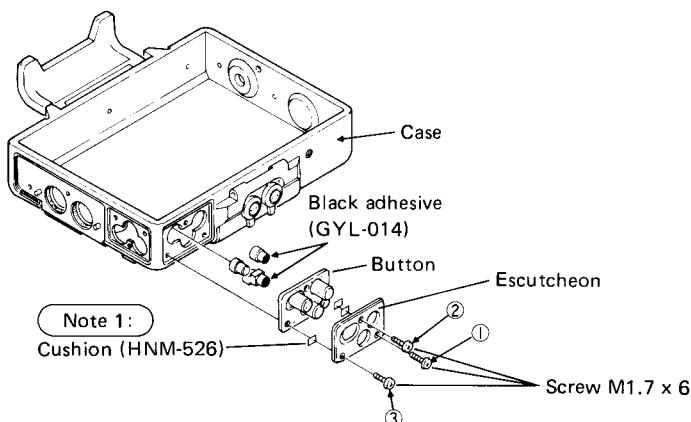


Fig. 2

- 1) Attach the cushions to the escutcheon.
- 2) Apply black adhesive (GYL-014) to the tips of the dummy buttons. (To be attached to the button)
- 3) Set the button and escutcheon in place and attach with the three screws, tightening them in order from one to three as numbered in the diagram.

Note 1:

Always use new cushions (HNM-526) for the three screws. (Attach the sticky side of the cushions to the escutcheon so that they cover the screw holes.)

Note 2:

Attach the button so that they fit firmly into the grooves in the case.

Note 3:

Be sure to apply grease (GEM-007) to the tips of each of the three screws.

3. Attaching the DC-IN side (Bracket and Escutcheon)

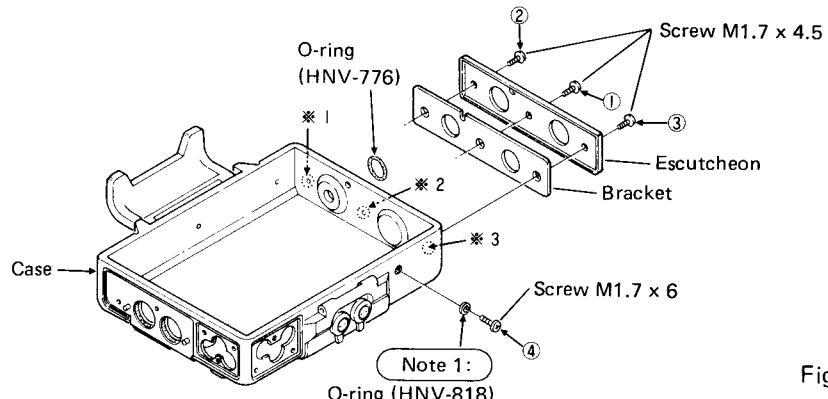


Fig. 3

- 1) Apply grease (GEM-006) to the screw holes and the area around them (marked *1, *2 and *3 in the diagram) on the outside of the case.
- 2) Set the bracket and escutcheon in place and attach with the three screws, tightening them in order from one to three as numbered in the diagram.
- 3) Place a new O-ring around screw ④ and tighten the screw.

Note 1:

Always use a new O-ring (HNV-818) with screw ④.

4. Attaching the headphone side (Bracket and Escutcheon)

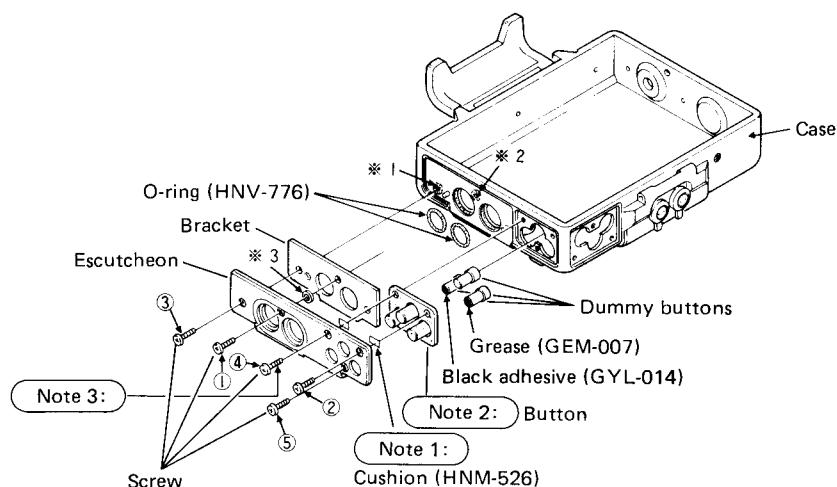


Fig. 4

- 1) Apply grease (GEM-006) to the screw holes and the area around them (marked *1 and *2 in the diagram) on the outside of the case.
- 2) Coat the rubber bushing (*3) to prevent holes from forming. (GEM-006)
- 3) Attach the cushions to the escarson.
- 4) Apply grease (GEM-007) and black adhesive (GYL-014) to the dummy buttons.
- 5) Insert the O-rings (HNV-776).
- 6) Set the button, bracket and escarson in place and attach with the five screws, tightening them in order from one to five as numbered in the diagram.

Note 1:

Always use new cushions (HNM-526) with screws ②, ④ and ⑤. (Attach the sticky side of the cushions to the escarson so that they cover the two screw holes.)

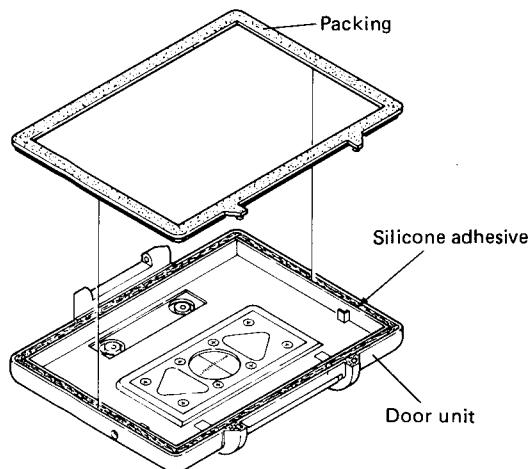
Note 2:

Attach the button so that they fit firmly into the grooves in the case.

Note 3:

Be sure to apply grease (GEM-007) to the tips of screws ②, ④ and ⑤.

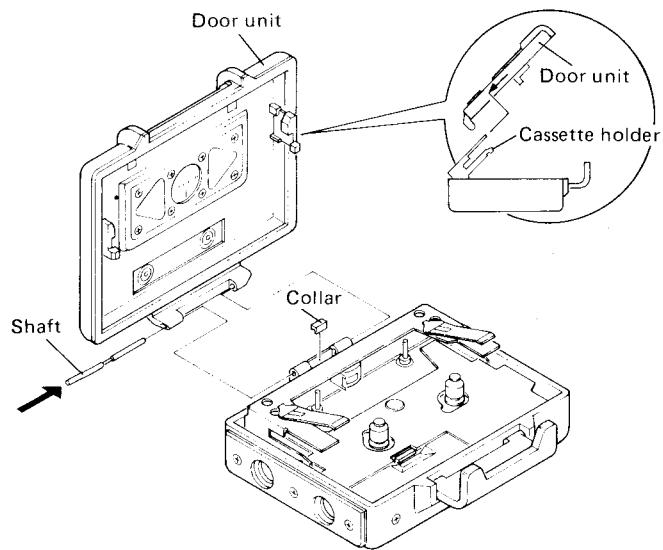
5. Attaching the Packing



- 1) Apply a silicone adhesive (GYL-015) to the grooves in the door unit.

Fig. 5

6. Attaching the Door Unit



1. Pass the cassette holder through the hinge on the door unit and then insert the shaft.

Fig. 6

●CHECKING FOR AIR(WATER) LEAKS

The PK-5AW and PK-R7AW are designed to prevent water from entering from the outside.

Water leakage testing method (See Fig. 7)

1. Insert the GGF-025 into the PHONES jack of the portable stereo cassette recorder and tighten it.
2. While blowing air through the hose, place the recorder in a bucket of water.
3. Check for any air leaks while the recorder is underwater.

Note 1:

Air will leak from the gasket when the air pressure exceeds a certain level. This is not a malfunction of the waterproof case. (If this occurs, lower the air pressure a little.) The gasket will leak at a low pressure if it is cracked or chipped, however.

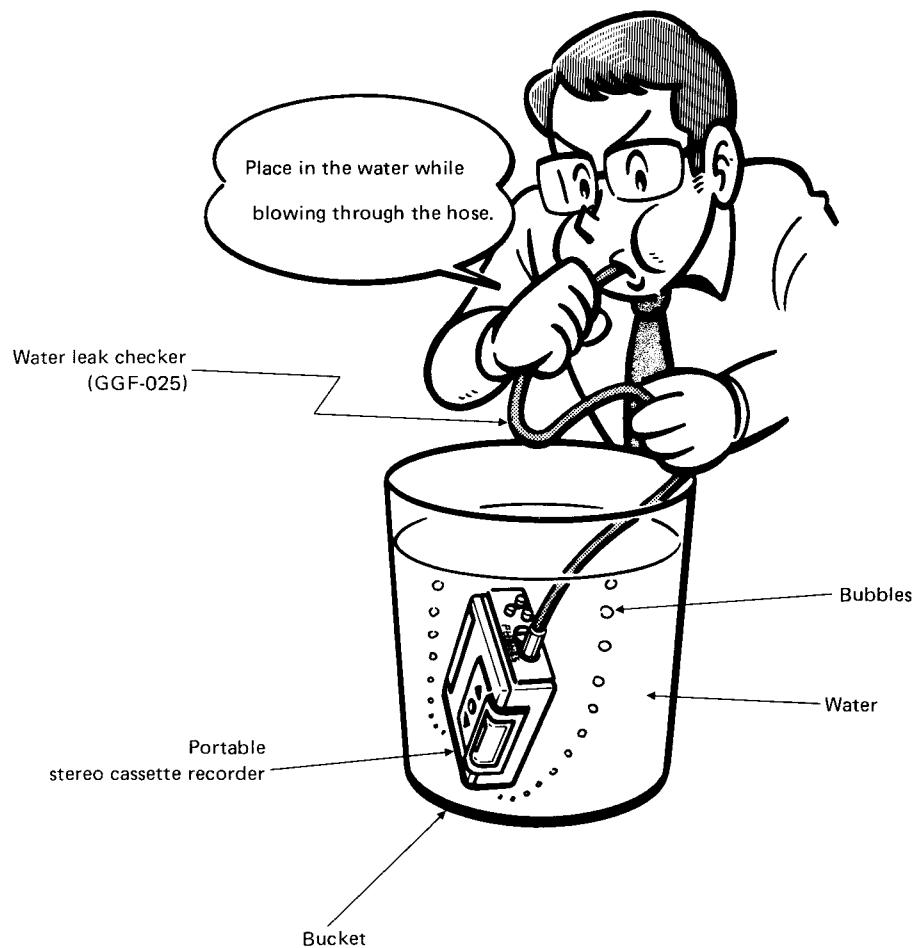


Fig. 7

● TROUBLESHOOTING GUIDE

If a leak is found at any one of points A — I during the air leak check procedure, refer to the page indicated for that point (see Figs. 8 and 9).

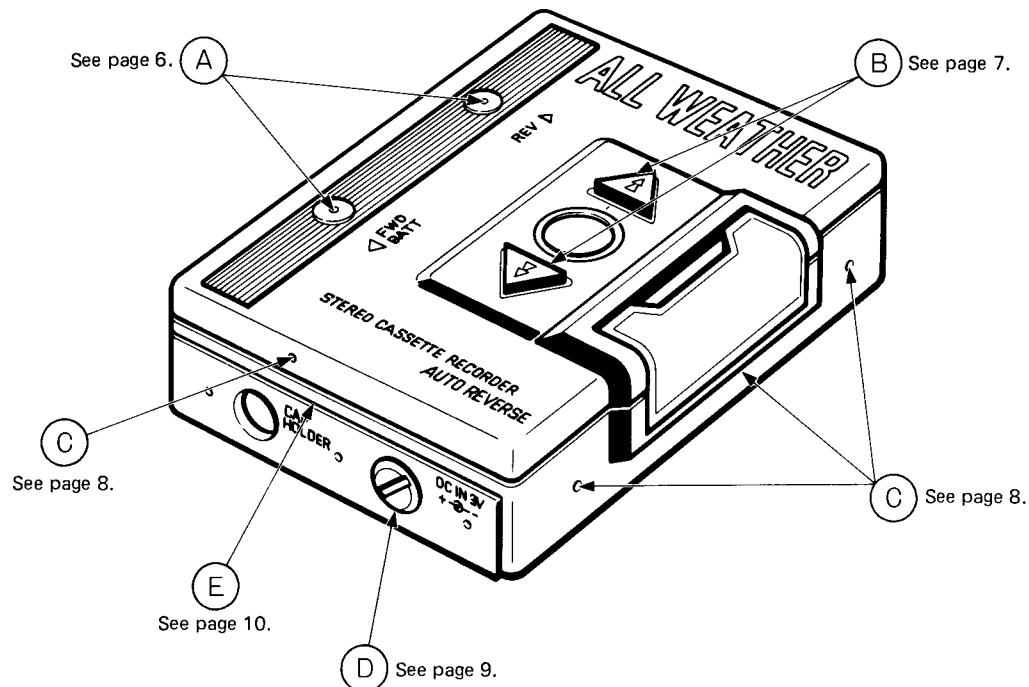


Fig. 8

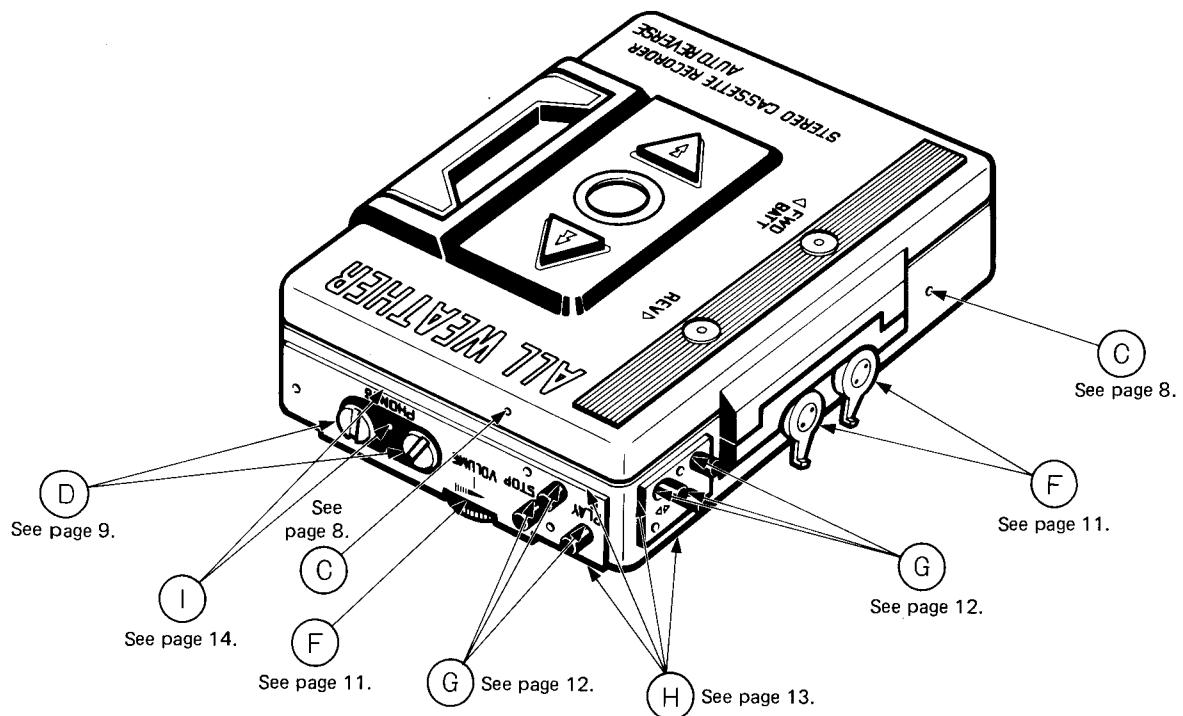


Fig. 9

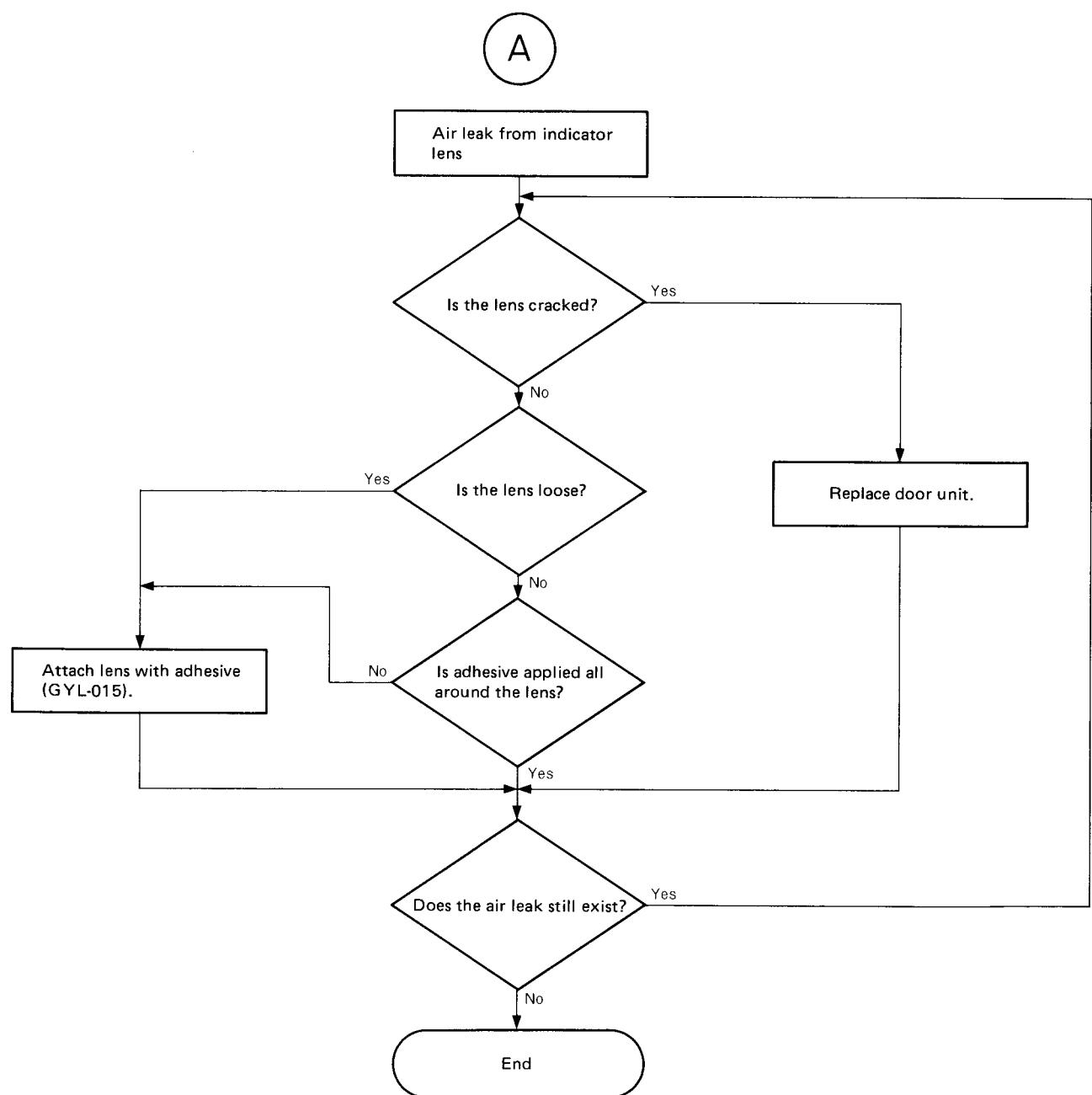


Fig. 10

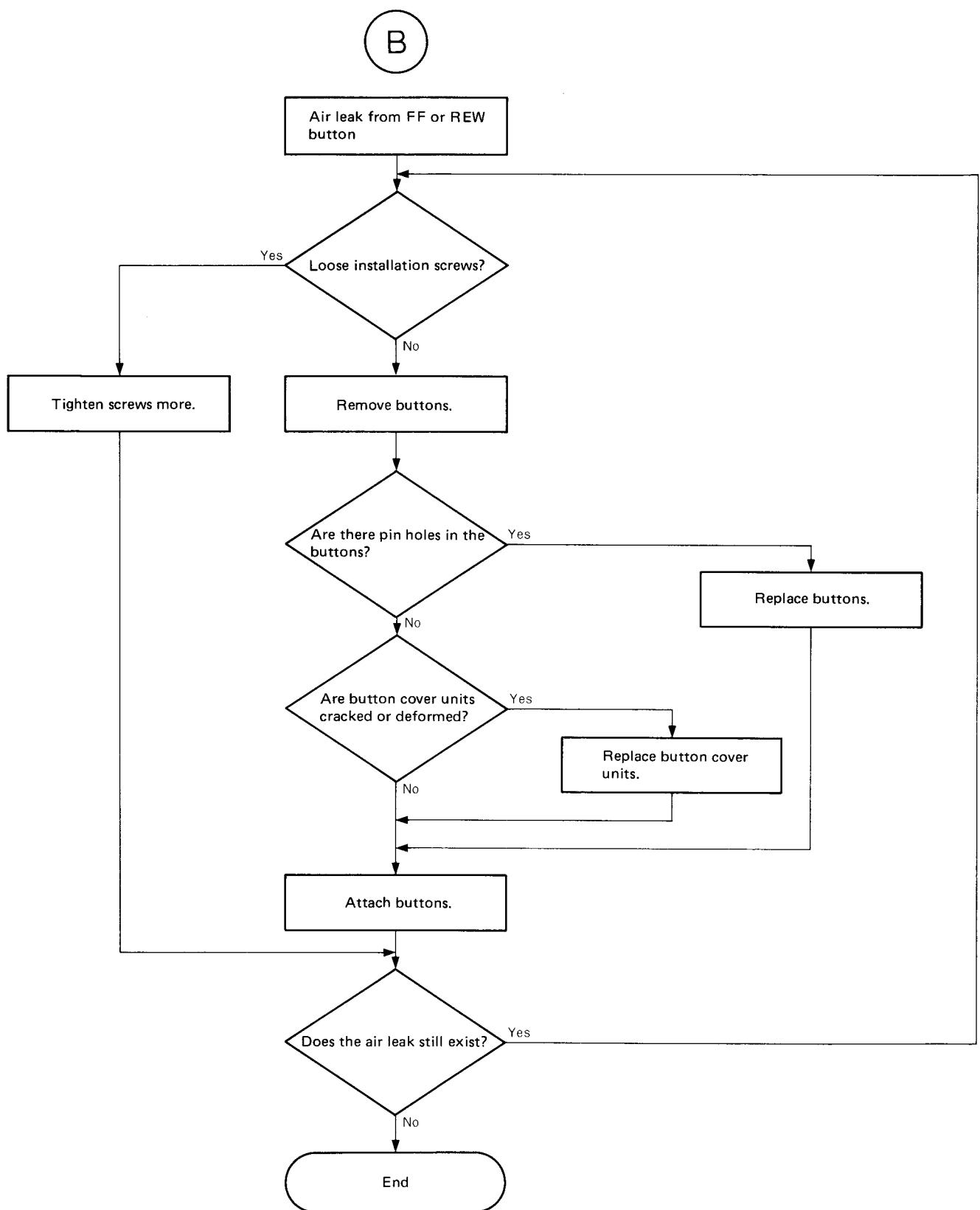


Fig. 11

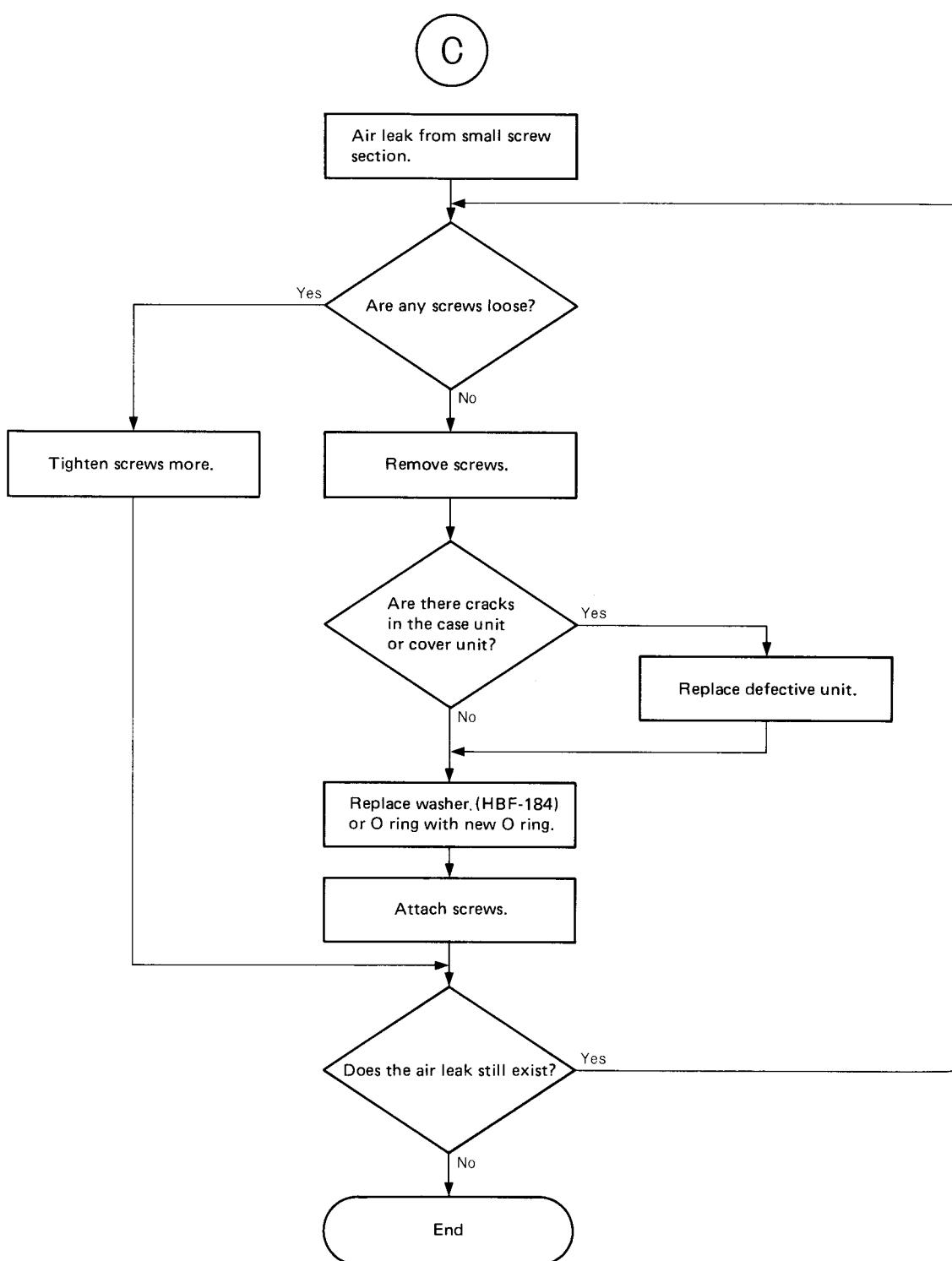


Fig. 12

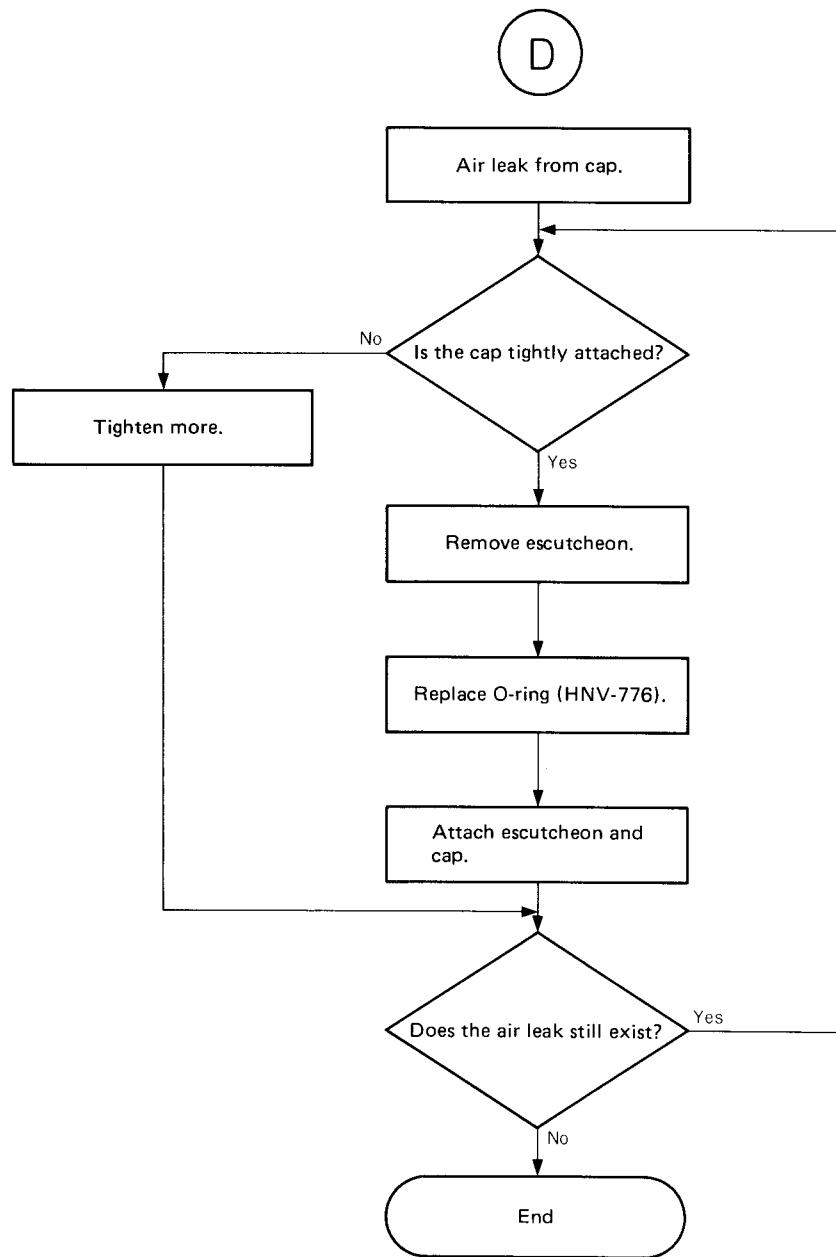


Fig. 13

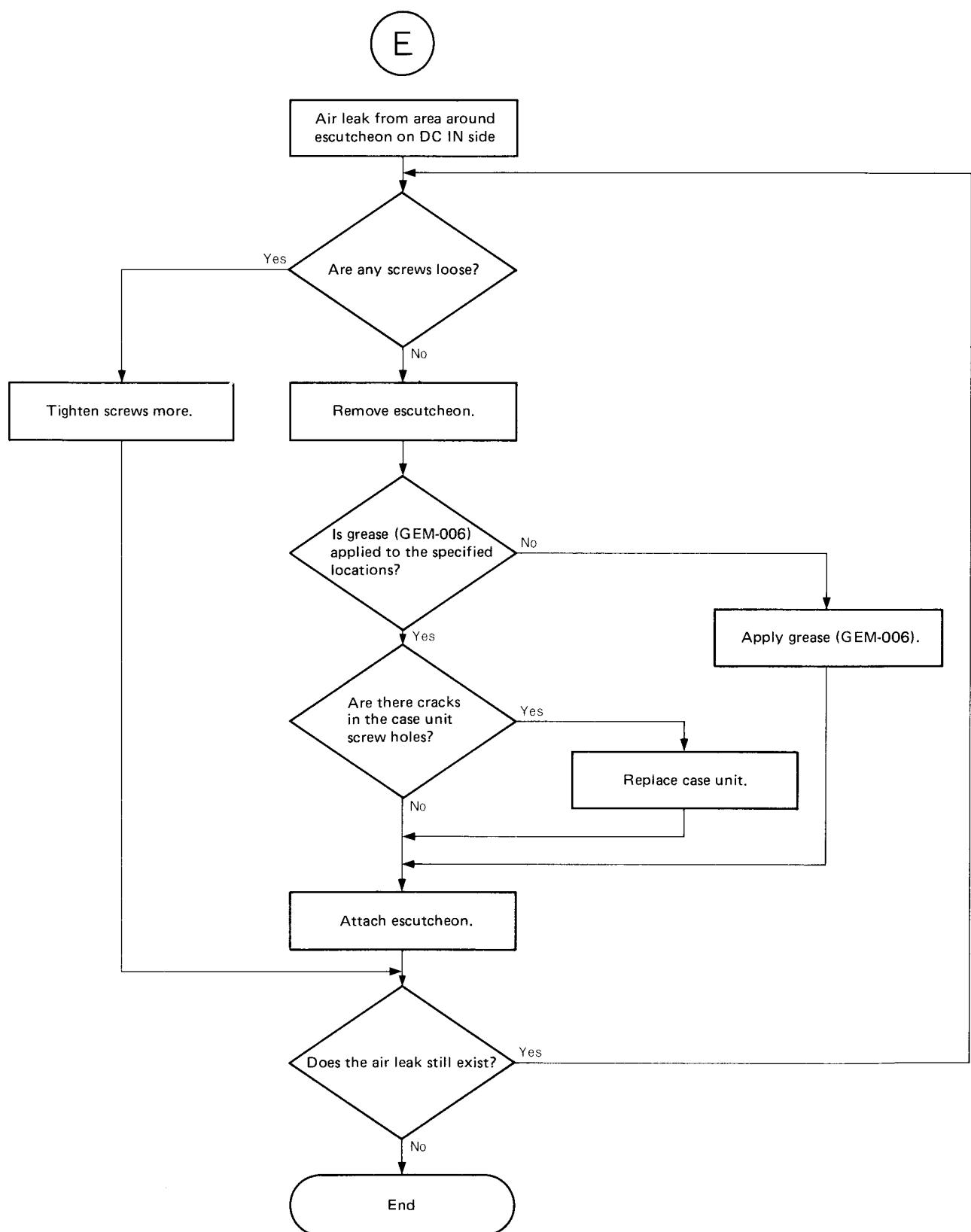


Fig. 14

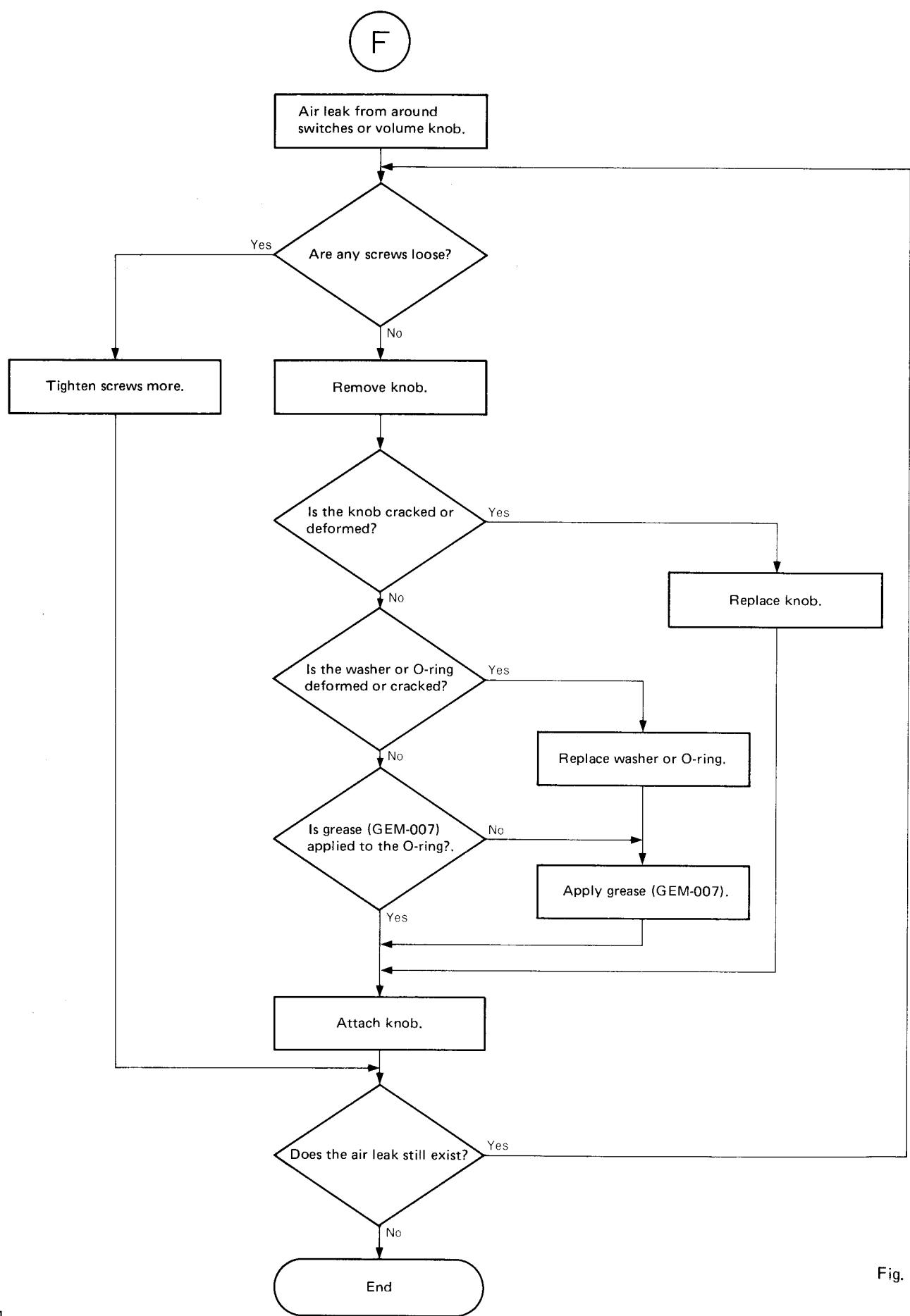


Fig. 15

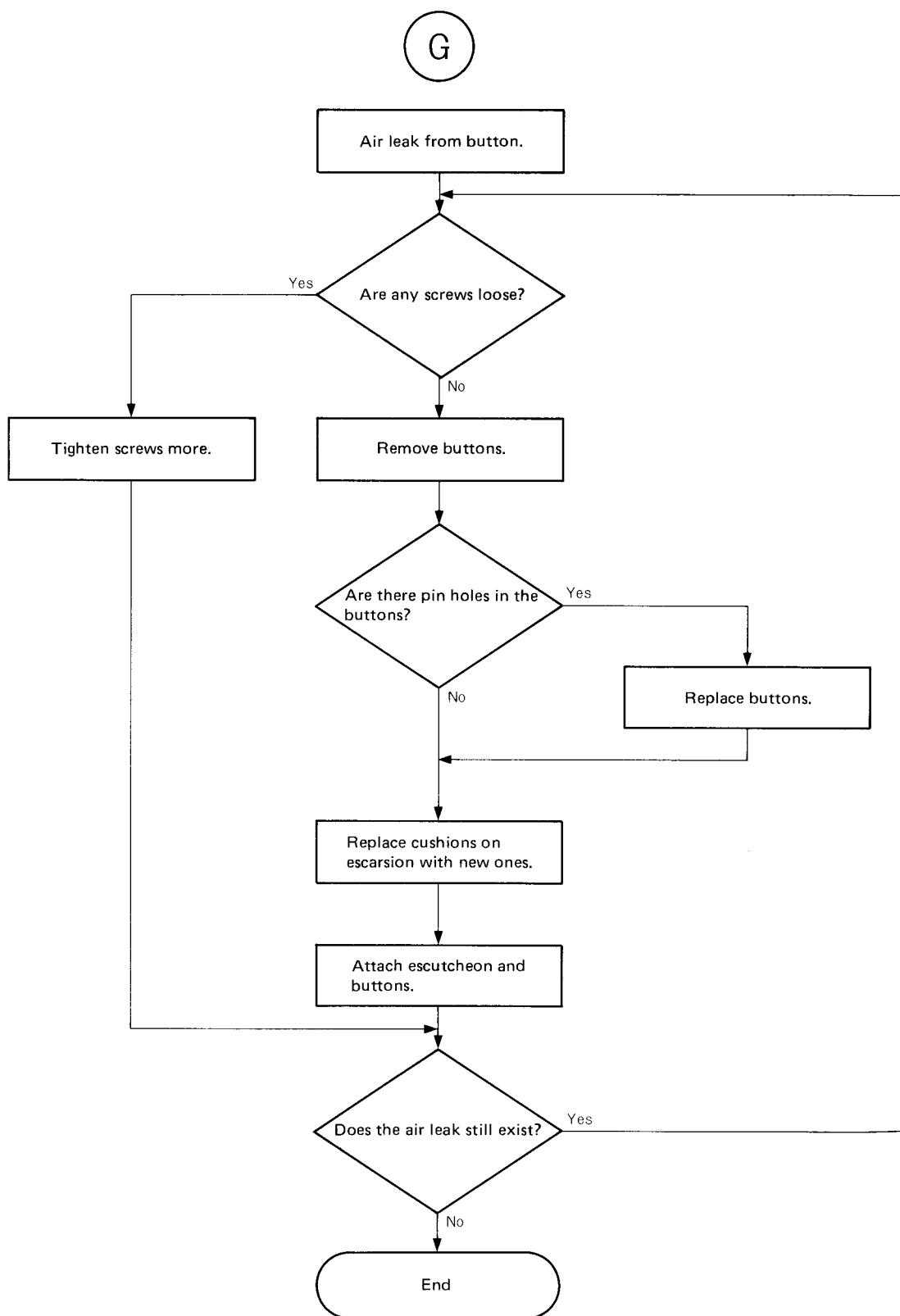


Fig. 16

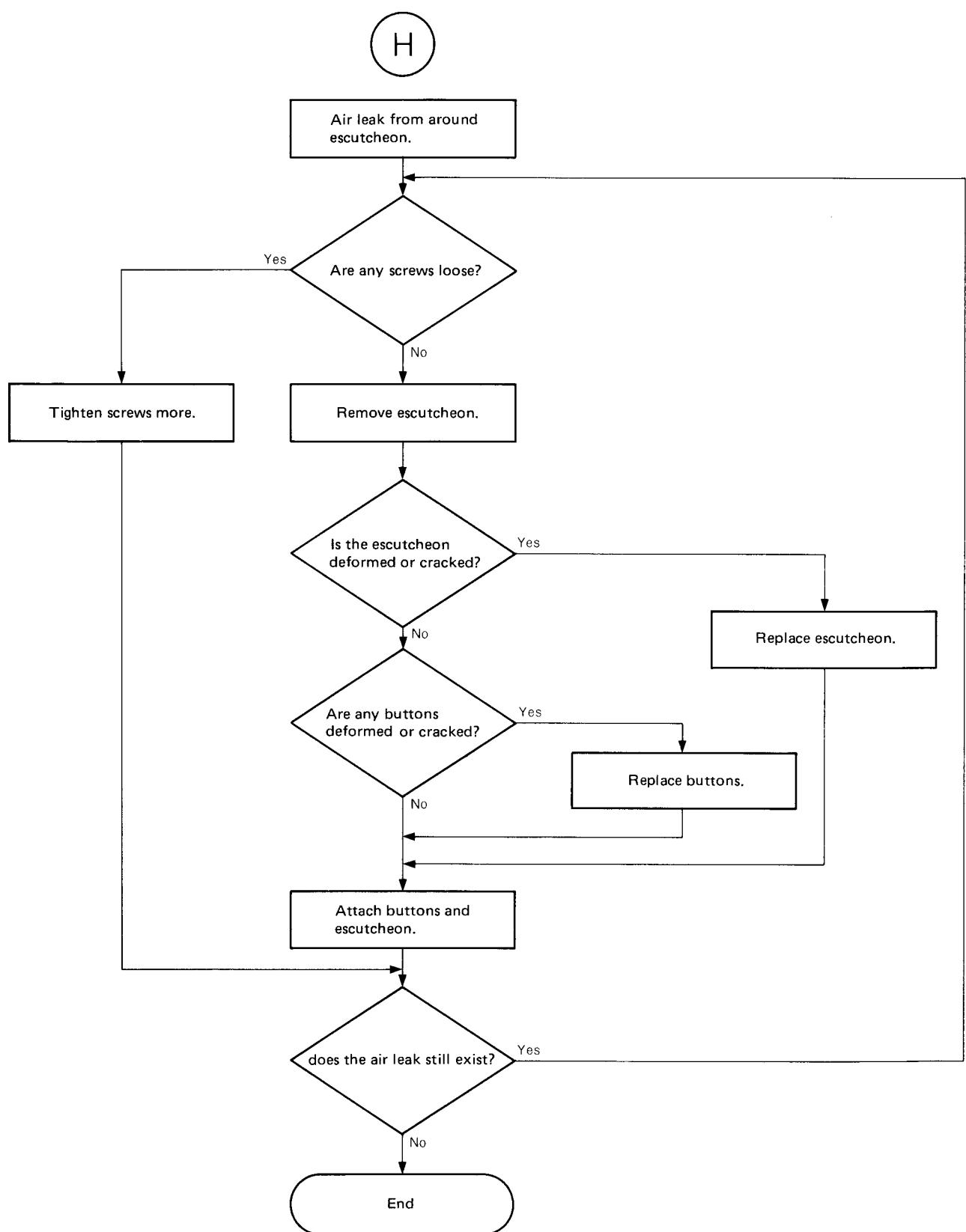


Fig. 17

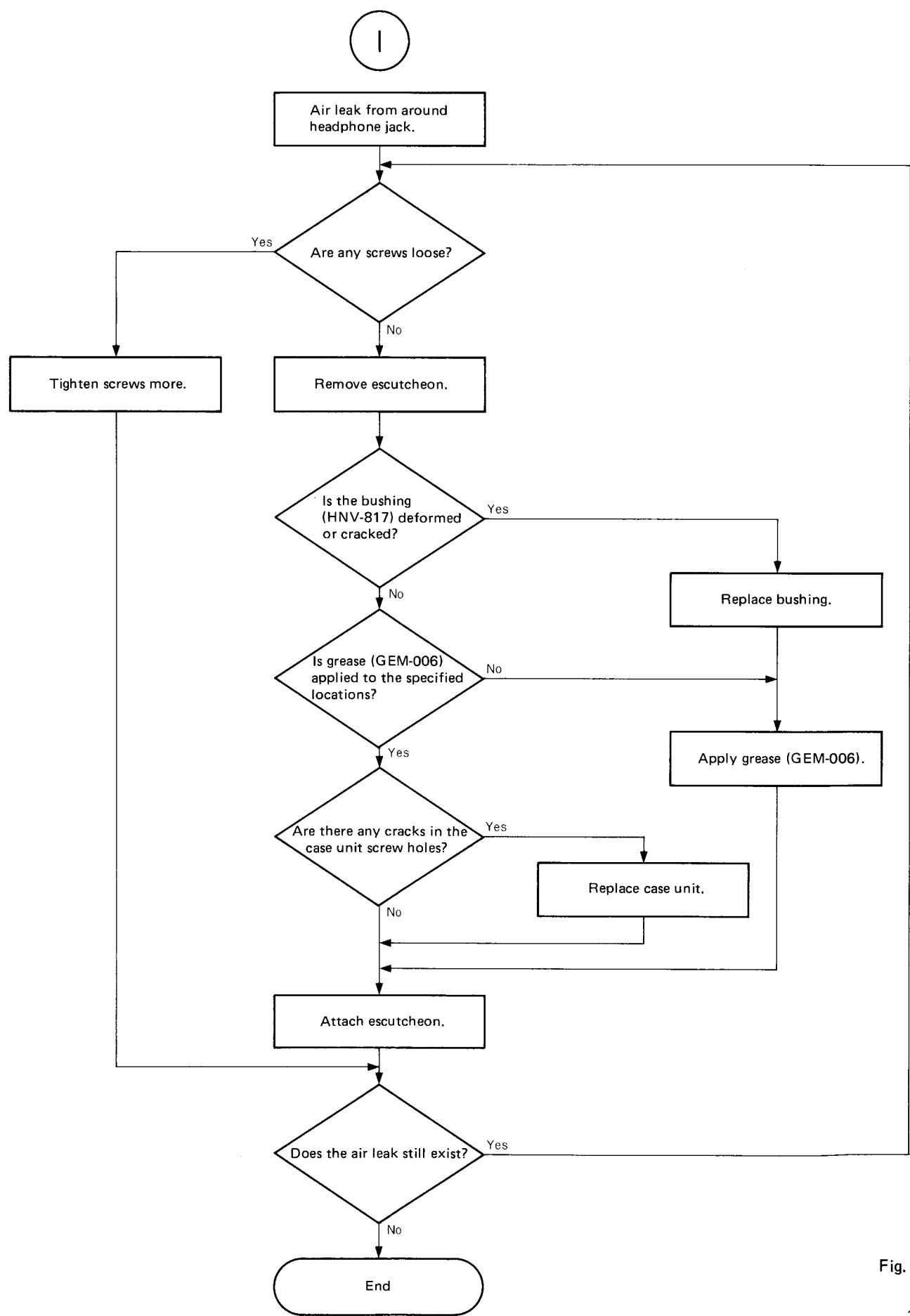


Fig. 18

Service Manual

REPAIR & ADJUSTMENTS



ORDER NO.
HRT-228-0

POCKETABLE STEREO CASSETTE PLAYER

PK-5AW (SV)

US, CA, E, G

PK-5AW (YL)

US, CA, E, G

- For the circuit and mechanism descriptions, please refer to the supplement of model PK-R7AW service manual (HRT-230).
- 'Dolby' and the double-D symbol are trademarks of Dolby Laboratories Licensing Corporation.
- Noise Reduction System manufactured under license from Dolby Laboratories Licensing Corporation.

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NOTICE:

This model is a water-resistant type. To prevent water leak, be sure to apply the designated silicone grease and adhesive to the parts illustrated on page 2 when re-assembling.

QUESTIONNAIRE

MODEL

One Model per questionnaire

Dear Servicer,

Thank you for your cooperation in the post-sale service of Pioneer products.

This questionnaire is used as a tool to improve the serviceability of our products and service manuals.
 Please evaluate this model and service manual by answering the following questions. Your ideas may be realized in our future products. Your answers will be appreciated. Thank you.

PIONEER ELECTRONIC CORP.

T. Nakagawa, Manager, Service Section, International Division

1. SERVICING EVALUATION Circle applicable number: Good Fair Poor

a. Disassembly/Re-assembly:

1	2	3	*4	*5
---	---	---	----	----

b. Circuit Checks:

1	2	3	*4	*5
---	---	---	----	----

c. Replacement of Parts:

1	2	3	*4	*5
---	---	---	----	----

d. Adjustment (s):

1	2	3	*4	*5
---	---	---	----	----

* If (4) or (5) was circled, please be specific.

QUESTIONNAIRE

Modèle

Un modèle par questionnaire

Cher Monsieur,

Nous voudrons faire l'enquête sur la réparation et le manuel de service comme indiqué dans la formule ci-jointe. Cette enquête a pour objectif d'améliorer la facilité de la réparation et le manuel de service. Vos précieux conseils seront sûrement considérés dans le processus de la réalisation de produits.
 Nous vous remercions de votre coopération.

Veuillez agréer, monsieur, l'expression de nos sentiments distingués.

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUATION EN FACILITE DE SERVICE
MODÈLE

Circulez le numéro.

Bon, Passable, Mauvais,

a. Démontage/remontage

1	2	3	*4	*5
---	---	---	----	----

b. Examen de circuits

1	2	3	*4	*5
---	---	---	----	----

c. Rechange de pièces

1	2	3	*4	*5
---	---	---	----	----

d. Facilité de réglage

1	2	3	*4	*5
---	---	---	----	----

* Si vous circulez No. 4 ou 5, donnez l'explication concrète.

Querido señor,

Muchas gracias por
 el servicio de post-
 Su opinión e idea es
 Nos complacemos en

PIONEER ELECT

T. Nakagawa, Mana

1. EVALUACION
MODELO

a. Desmonte:

b. Examen de circ

c. Reemplazo de

d. Ajuste:

* Si marca (4) o (

QUESTINAIRE

Modèle _____

Un modèle par questionnaire

Cher Monsieur,

Nous voudrons faire l'enquête sur la réparation et le manuel de service comme indiqué dans la formule ci-jointe. Cette enquête a pour objectif d'améliorer la facilité de la réparation et le manuel de service. Vos précieux conseils seront sûrement considérés dans le processus de la réalisation de produits.

Nous vous remercions de votre coopération.

Veuillez agréer, monsieur, l'expression de nos sentiments distingués.

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

Poor

*4 *5

*4 *5

*4 *5

*4 *5

1. EVALUATION EN FACILITE DE SERVICE

Circulez le numéro.

Bon, Passable, Mauvais,

a. Démontage/remontage

1 2 3 *4 *5

b. Examen de circuits

1 2 3 *4 *5

c. Rechange de pièces

1 2 3 *4 *5

d. Facilité de réglage

1 2 3 *4 *5

* Si vous circulez No. 4 ou 5, donnez l'explication concrète.

ENCUESTA

Modelo _____

Uno modelo por encuesta

Querido señor,

Muchas gracias por su cooperación de servicio de post-venta de productos de Pioneer. Esto es para mejorar el servicio de post-venta de nuestros productos. Les pedimos a ustedes responder a las preguntas siguientes. Su opinión e idea estarán tenido en cuenta en los productos futuros.

Nos complacemos en saludarles muy atentamente,

PIONEER ELECTRONIC CORPORATION

T. Nakagawa, Manager, Service Section, Administration Department, International Division

1. EVALUACION EN LA FACILIDAD DE SERVICIO

MODELO

Marque uno entre los numeros siguientes.

Bueno Medio Malo

a. Desmonte:

1 2 3 *4 *5

b. Examen de circuito:

1 2 3 *4 *5

c. Reemplazo de piezas:

1 2 3 *4 *5

d. Ajuste:

1 2 3 *4 *5

* Si marca (4) o (5), ejemplifiquelo concretamente.

e. Su consejo, opinion u idea en el servicio de este modelo.

2. EVALUACION DE MANUAL DE SERVICIO

a. Descripción

b. Circuito diagramma

3. OTRAS PARTES DIFICIL POR REPARAR

Respondido por

Nombre :

Compania :

Dirección :

Fecha :

Edad :

Manda esta enuesta al domicilio de distribuidor por favor.

e. Votre conseil ou avis sur la service

2. VOTRE APPRÉCIATION EN SERVICE MANUEL

a. Description

b. Circuit diagramme

3. AUTRES POINTS DIFFICILES

Répondé par :

Date :

Nom :

Age :

Compagnie :

Adresse :

Adressez-vous ce questionnaire au distributeur s'il vous plait.

e. Your advice,

2. SERVICE M

a. Circuit & Me

b. Circuit Diagram

3. OTHER

Please descri

Completed by :

Company Name

Address :

City/State/Zip :

Please send this for

e. Your advice, opinion or ideas related to servicing this product.

2. SERVICE MANUAL EVALUATION

a. Circuit & Mechanism Description

b. Circuit Diagram

3. OTHER

Please describe other areas of servicing which you may find difficult.

Completed by :

Date :

Company Name :

Address :

City/State/Zip :

Please send this form filled to the distributor in your country.

1. PARTS LOCATION

NOTE

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
- ★★ : GENERALLY MOVES FASTER THAN ★.
- This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

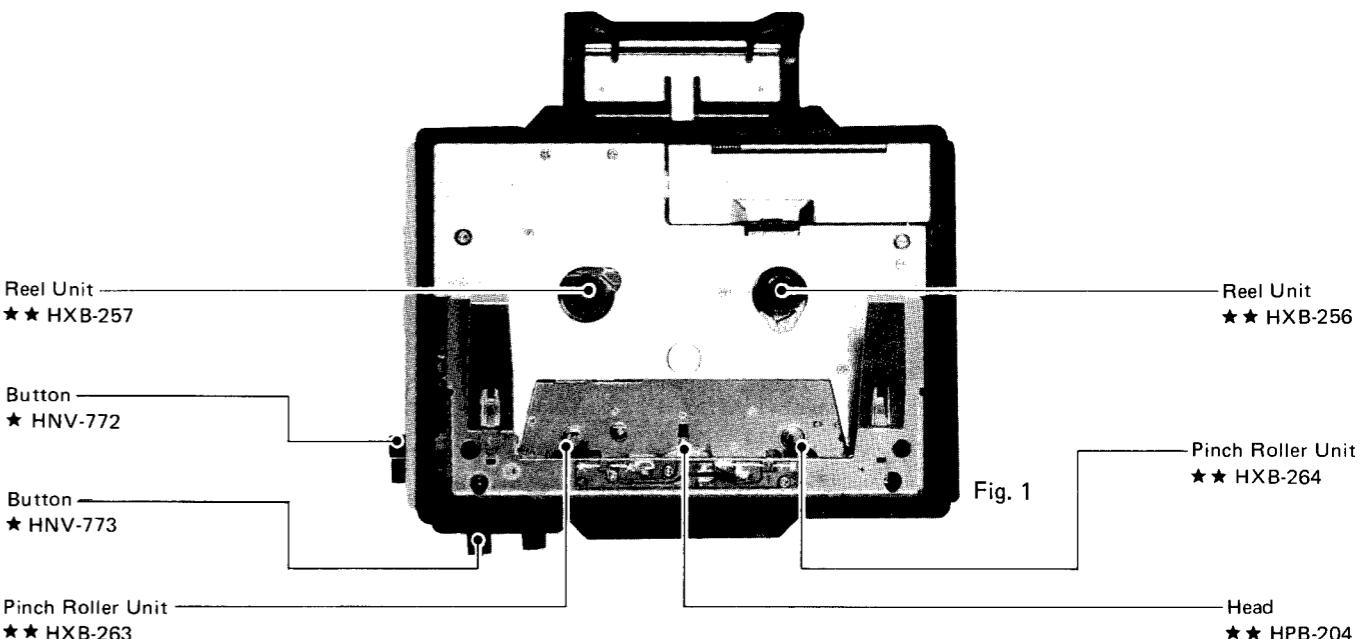


Fig. 1

Pinch Roller Unit
★★ HXB-263

Button
★ HNV-772

Button
★ HNV-773

Reel Unit
★★ HXB-257

Reel Unit
★★ HXB-256

Pinch Roller Unit
★★ HXB-264

Head
★★ HPB-204

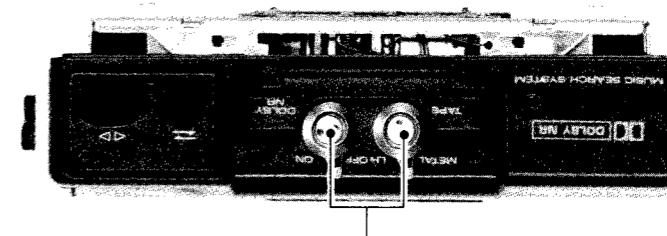


Fig. 2

Knob
★ HAC-365

2. DISASSEMBLY

• Removing the Door Assembly

- Pull the shaft out from the left side and remove the door assembly.
- When assembling the unit again, insert the shaft after passing the cassette holder through the hook in the door assembly.

Order no. for the grease, adhesive and tools.

order no.	description
GYL-015	Silicone based adhesive
GEM-006	Silicone grease for fixed components.
GEM-007	Silicone grease for movable components.
GGL-060	Crab-type screwdriver
GGL-061	Crab-type screwdriver

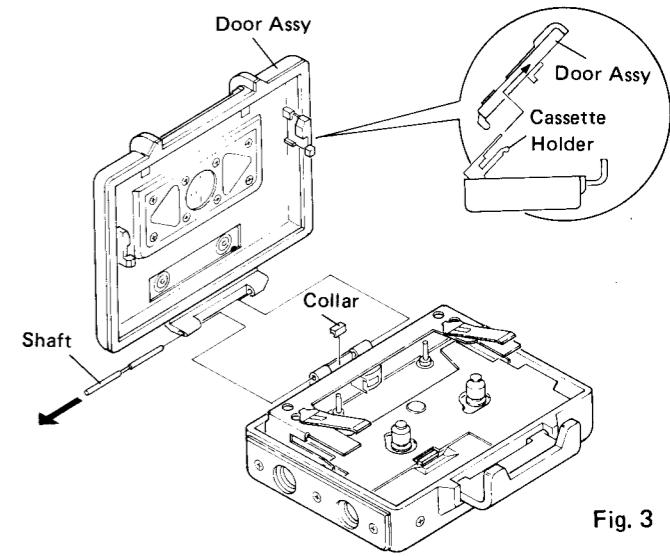


Fig. 3

● Replacing the Packing

1. Remove the packing from the door assembly.
2. When reassembling, attach the new packing using a silicone based adhesive (GYL-015).

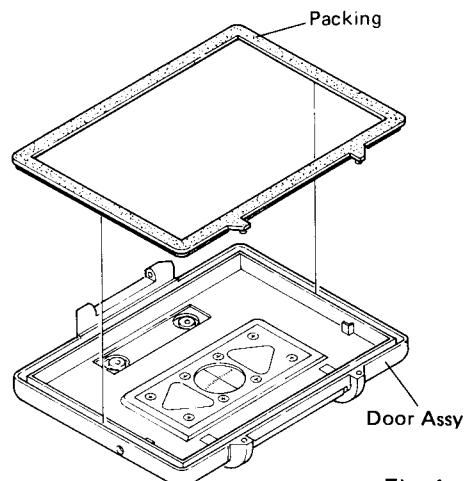


Fig. 4

● Removing the Cassette Mechanism Assy and Other Related Parts

1. The cassette mechanism assy can be removed after removing the escutcheons, brackets and buttons.

Note: When removing the cassette mechanism assy, be careful it does not catch on the volume unit.

Parts marked with an asterisk (*) are coated with silicone grease (GEM-006) to resist water.

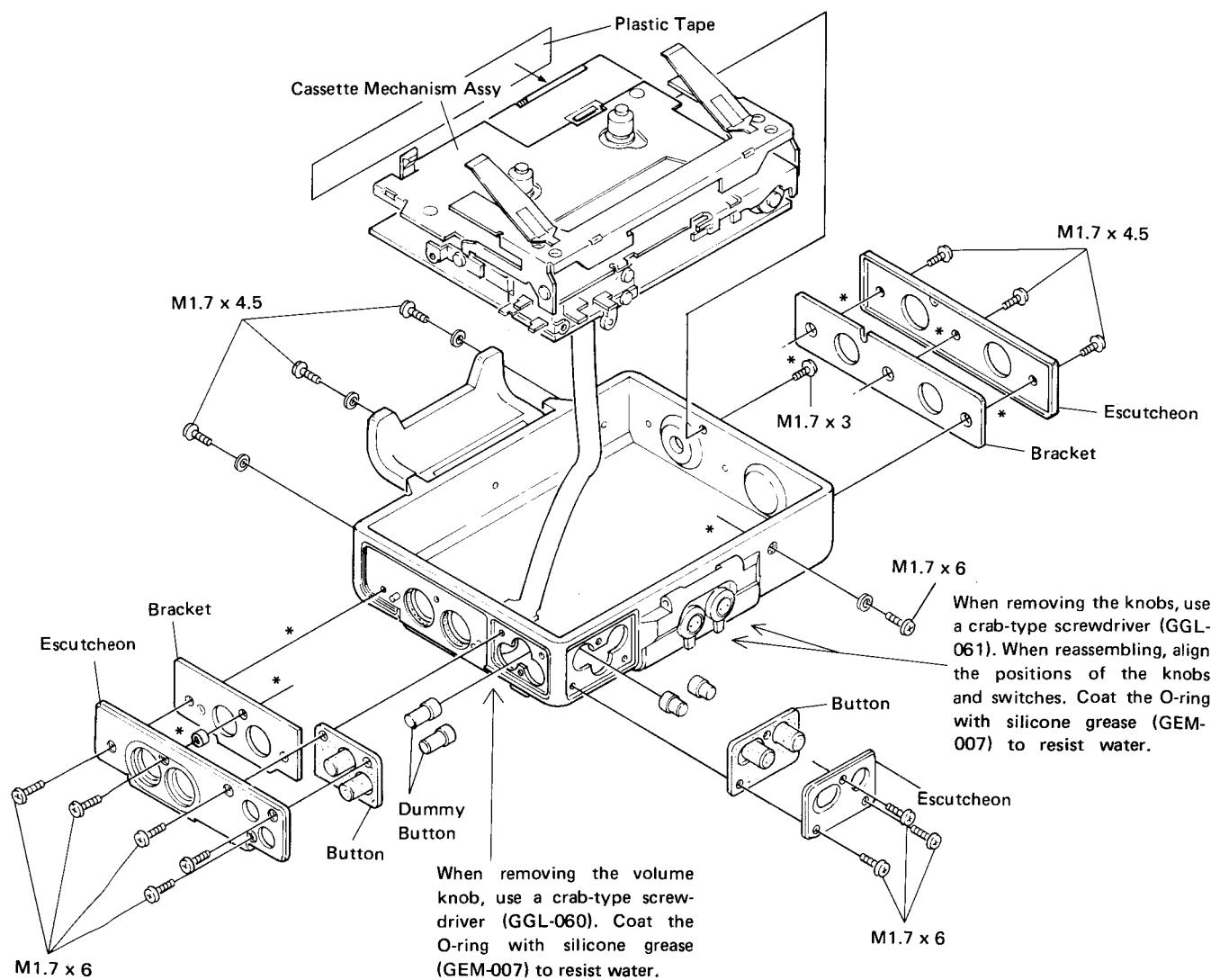


Fig. 5

● **Removing the Amp Unit**

1. Remove the four screws and lift off the shield.
2. When the soldering at point A is removed, the amp unit can be removed. (The negative side spring of the battery terminal is at point B; since this can catch on the battery case, remove the amp unit while holding the spring down.)
3. When reassembling, be sure to align the amp unit switch with the cassette mechanism lever.

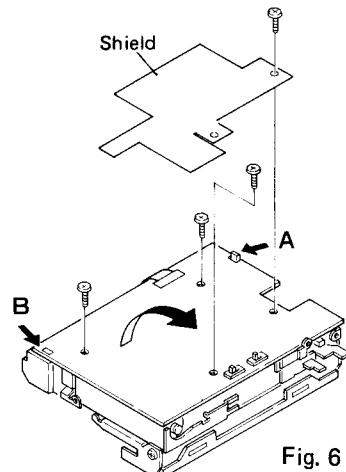


Fig. 6

● **Attaching the Belt**

1. Attach the belt as shown in figure 7.

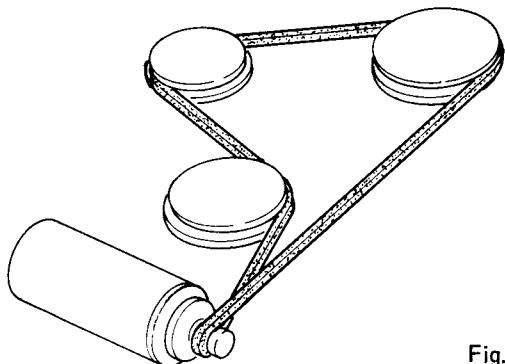
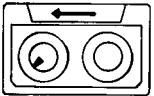
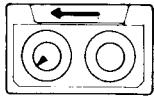
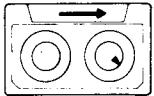
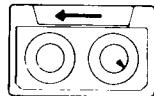


Fig. 7

3. ADJUSTMENT

3.1 CHECK POINTS OF CASSETTE MECHANISM

<p>Confirm the following items when replacing parts of the cassette mechanism.</p>	<p>■ Tape speed deviation: $3,000 \pm 90\text{Hz}$ $(4.76 \text{ cm/s} \pm 3\%)$ Using an STD-301, measure the speed at the start and end of winding and take the maximum value. Measuring time shall be 5 ~ 6 seconds.</p>	<p>■ Wow and flutter: Less than 0.28% (WRMS) Using an STD-301, measure the wow and flutter at the start and end of winding and take the maximum value. If values indicated by the pointer vary considerably, adjust to 70% of the minimum and maximum values. Measuring time shall be 5 ~ 6 seconds.</p>
<p>■ Fast forward and rewinding time: Less than 150 seconds Using an C-60, set to fast forward and rewind, and measure the time with a stop watch.</p>	<p>■ Winding torque: 28 ~ 48 g.cm  Using a cassette type torque meter (120 g.cm), measure the minimum value while in the play mode. Measuring time shall be 5 ~ 6 seconds.</p>	<p>■ F.F torque: More than 70g.cm  Using a cassette type torque meter (120 g.cm), measure the value when the tape stops in the F.F. mode.</p>
<p>■ REW torque: More than 70g.cm  Using a cassette type torque meter (120 g.cm), measure the value when the tape stops in the REW mode.</p>	<p>■ Back tension torque: Less than 3.5 g.cm  After setting in the REW mode without loading a cassette tape for 5 minutes, measure the back tension torque in the play mode, using a cassette type torque meter.</p>	<p>■ Pinch roller pressure: 170 ~ 205g  Measure the pressure with a tension meter (1 kg) at the point where the rotor stops rotating at the center of the pinch roller.</p>
<p>■ Button operating force: PLAY Less than 300g STOP Less than 300g One-side Stop Less than 300g PROGRAM Less than 400g FF/REW Less than 600g</p>		

3.2 TAPE SPEED ADJUSTMENT

- Connection Diagram

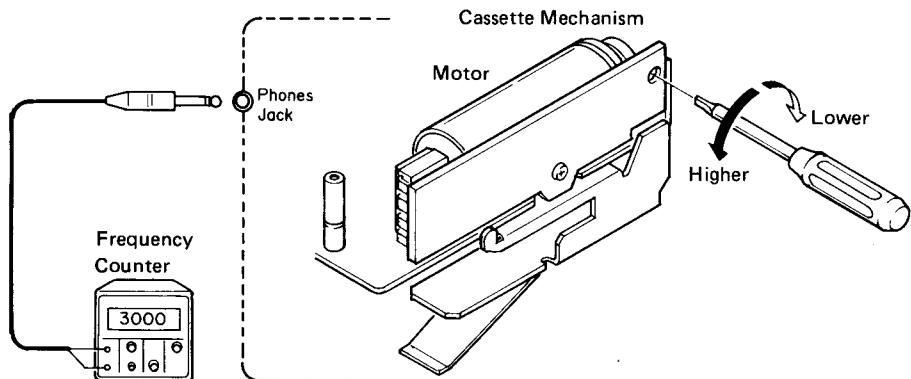


Fig. 8

- To Adjust

1. Connect the frequency counter to the phones jack.
2. Play back an STD-301 (3kHz, -10dB) and adjust the semi-fixed resistor on the motor control unit so the frequency counter reads 3000Hz \pm 90Hz. Rotate clock-

wise to lower the tape speed and counterclockwise to raise the speed.

3. Repeat this procedure with the tape moving in the opposite direction.

3.3 DOLBY NR ADJUSTMENT

- Connection Diagram

Switch position
Dolby NR switch. OFF

Note: Use an electrically insulated screwdriver to perform these adjustments.

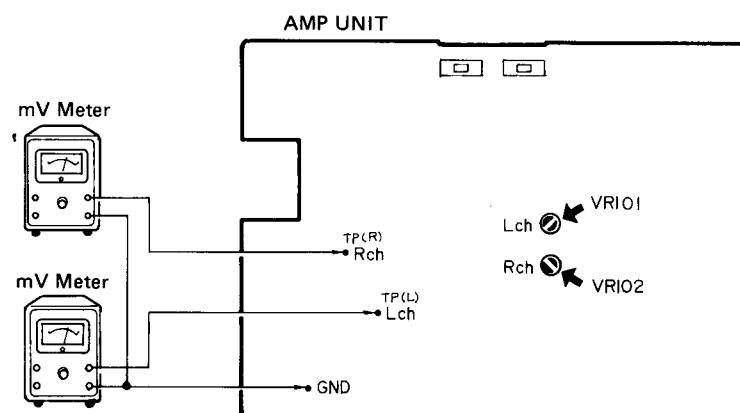


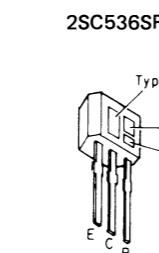
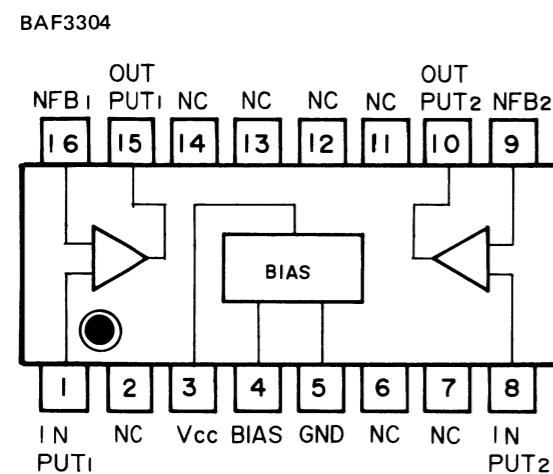
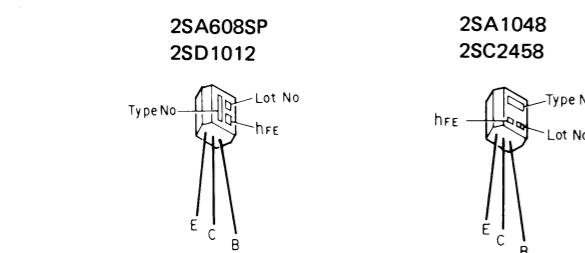
Fig. 9

- To Adjust

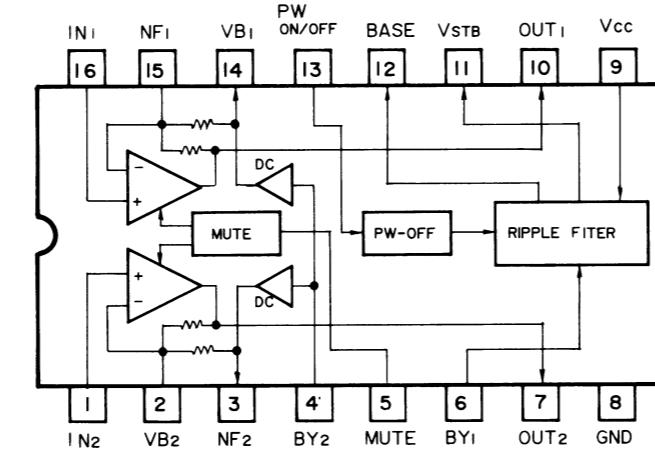
1. Play back a CT-150 (400Hz, 200nwb/m) in the forward direction and adjust VR101 (Lch) and VR102 (Rch) so the mV meters read 100mV. Rotate clockwise to raise

- the voltage and counterclockwise to lower the voltage.
2. Confirm that both mV meters read 100mV \pm 20mV in the reverse playback mode.

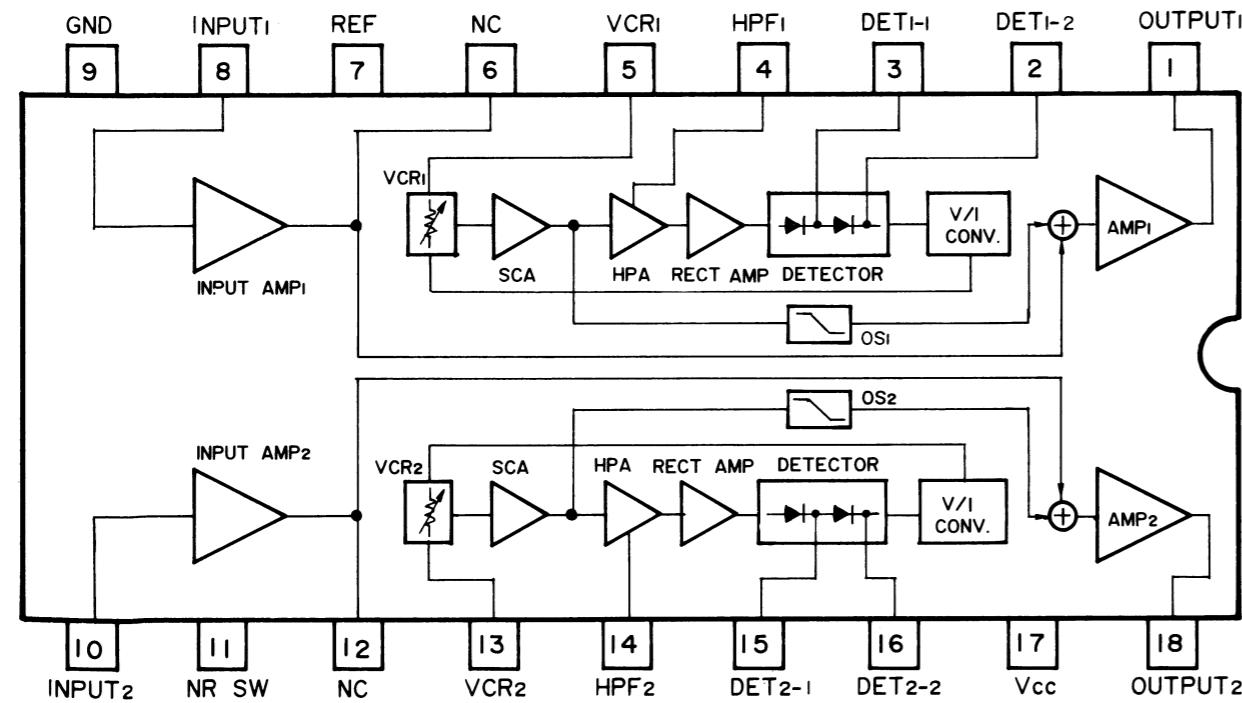
● IC's and Transistors



TA7688F



HA12048FP



Note: Refer to Service Manual PK-RA7W (HRT-229) for terminal function of HA12048FP and TA7688F.

4. PACKING METHOD

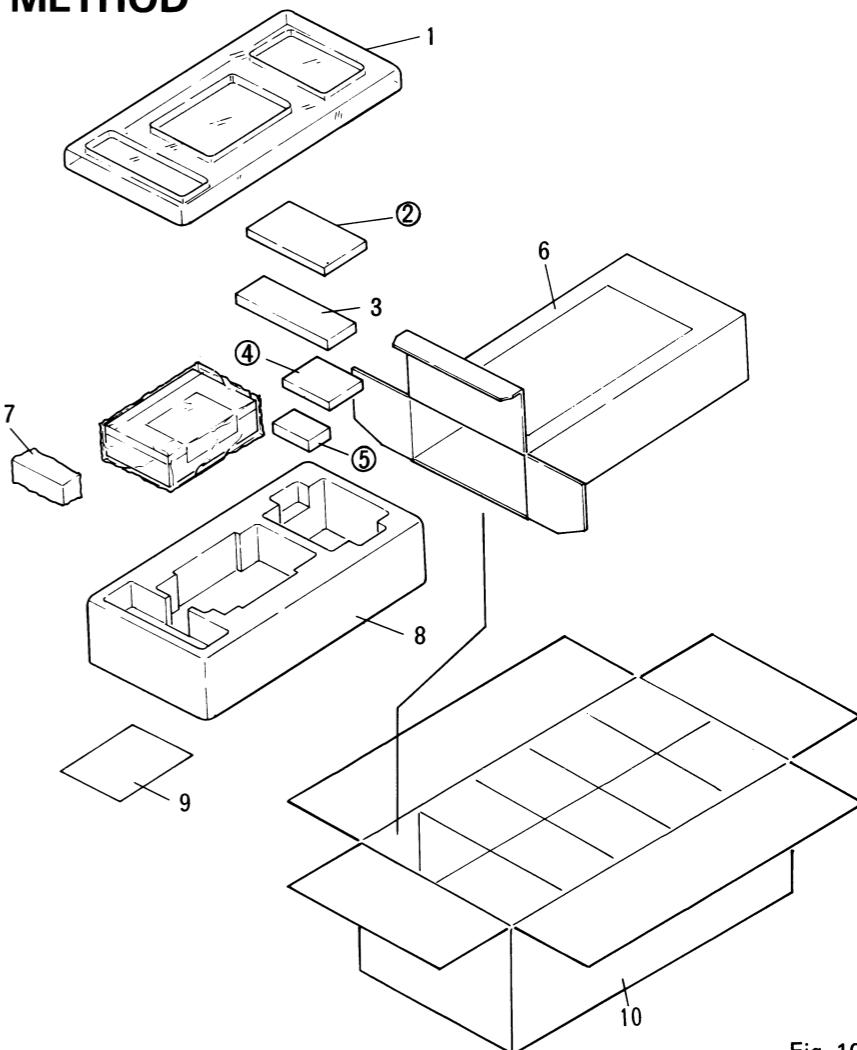


Fig. 10

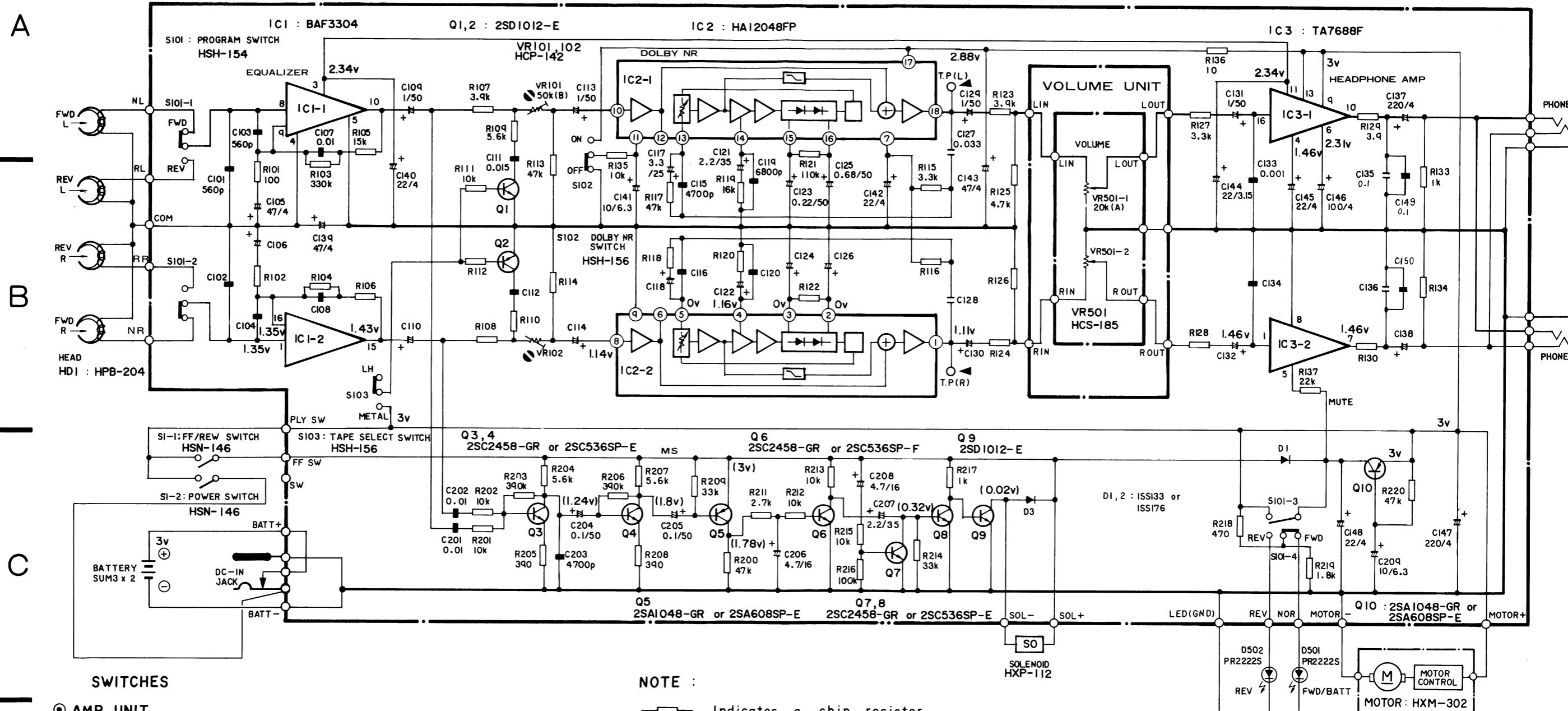
● Parts List

- For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.
★★ : GENERALLY MOVES FASTER THAN ★.
This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- Parts whose parts numbers are omitted are subject to being not supplied.

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
1.		HHA-836	Protector (B)	9.		HRD-220	Owner's Manual (PK-5AW/US, CA, E, G)
2.		HMX-112	Recorded Cassette Tape				(English, French, German)
3.		CXB-303	Belt				Owner's Manual (PK-5AW/E)
4.			Belt Hanger Unit				(Spanish, Swedish, Dutch, Italy, Chinese, Arabic)
5.			Battery				Contain Box (PK-5AW(SV)/US)
6.		HHA-922	Carton	10.		HHA-936	Contain Box (PK-5AW(YL)/US)
7.		HPH-103	Headphone				
8.		HHA-835	Protector (A)			HHA-937	

5. SCHEMATIC CIRCUIT DIAGRAM

AMP UNIT (HWK-240)



SWITCHES

◎ AMP UNIT

S101 : PROGRAM SWITCH FWD — REV
 S102 : DOLBY NR SWITCH ON — OFF
 S103 : TAPE SELECT SWITCH LH — METAL

◎ MISCELLANEOUS

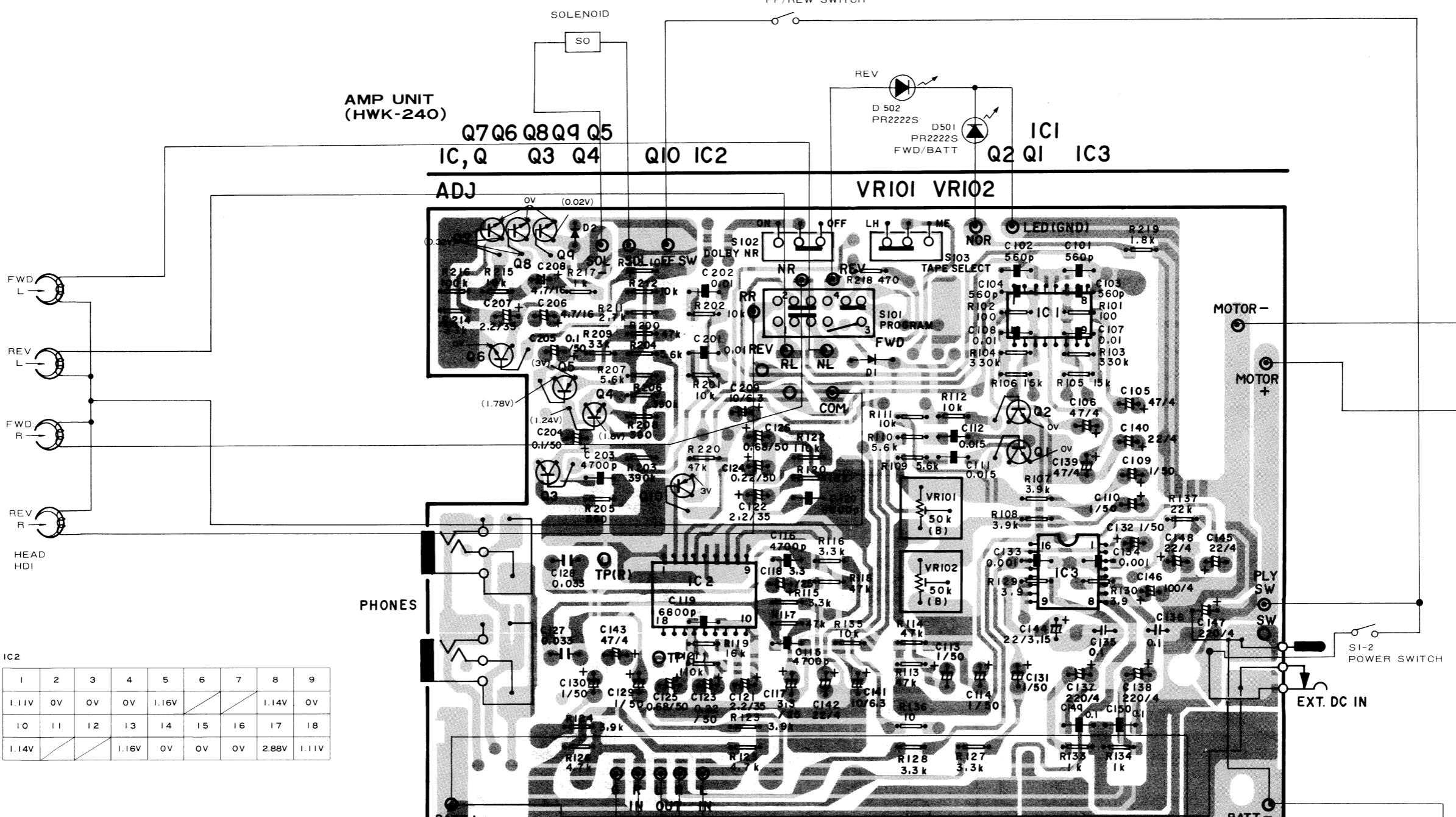
SI-1 : FF/REW SWITCH ON — OFF
 SI-2 : POWER SWITCH ON — OFF

The underlined indicates the switch position.

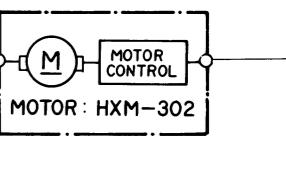
6. CONNECTION DIAGRAM

1 2 3 4 5 6

A



IC1		IC2		IC3			
1	3	5	8	9	10	15	16
1.35V	2.34V	0V	1.35V				
1.35V	1.43V	1.43V	1.35V				



A

B

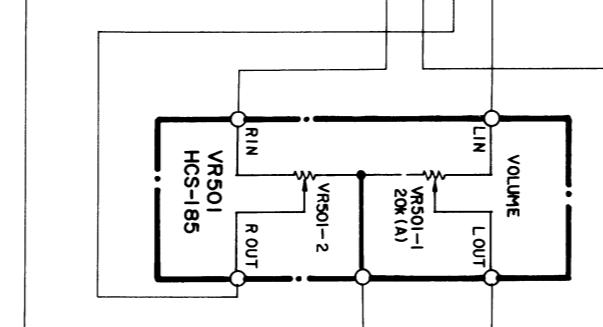
C

D

Fig. 12

1 2 3 4 5 6

D

VOLUME
UNIT

IC3							
1	2	3	4	5	6	7	8
1.46V			1.46V		2.31V	1.46V	0V
9	10	11	12	13	14	15	16
3V	1.46V	2.34V		3V		1.46V	

11

6. CONNECTION DIAGRAM

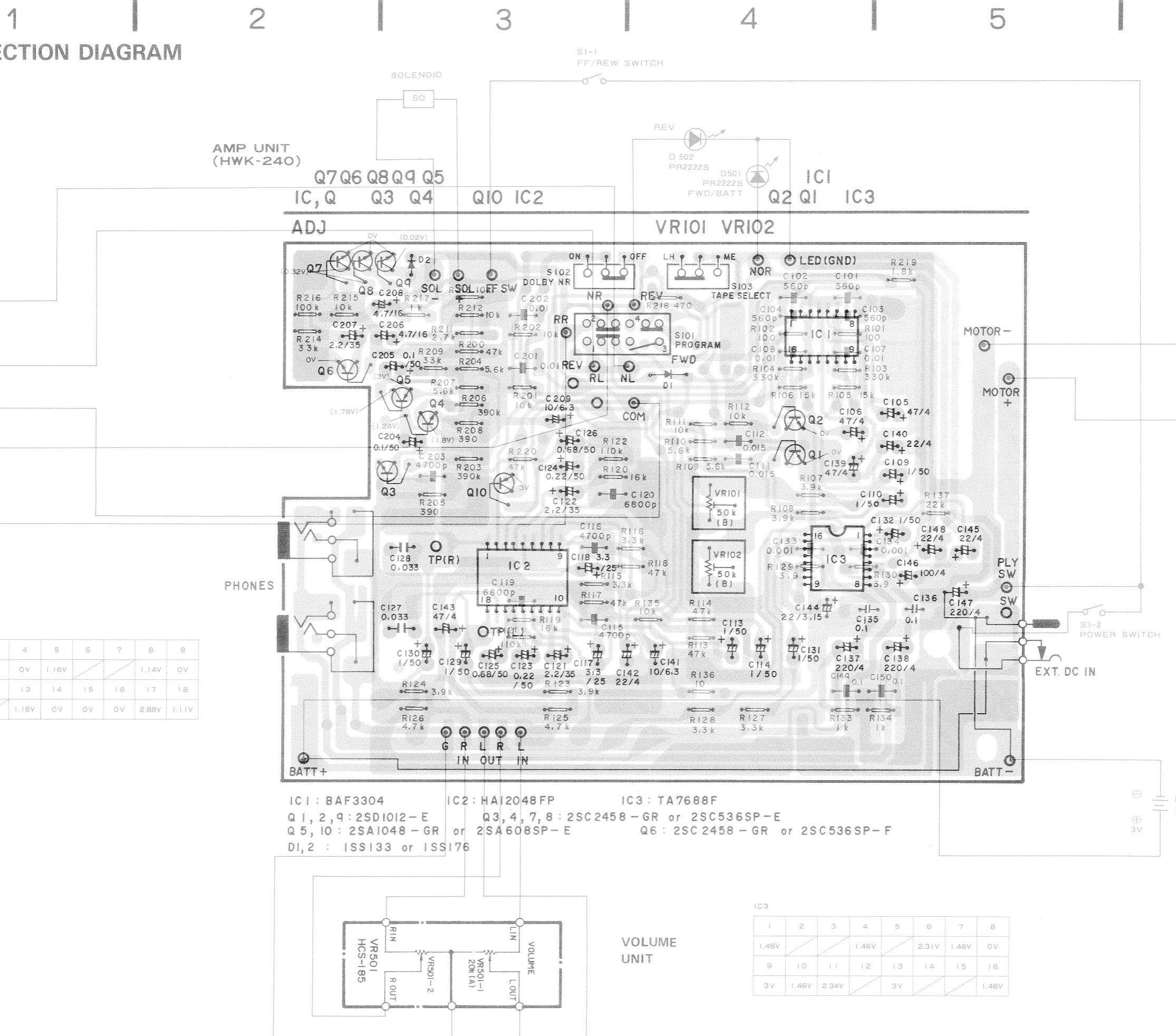
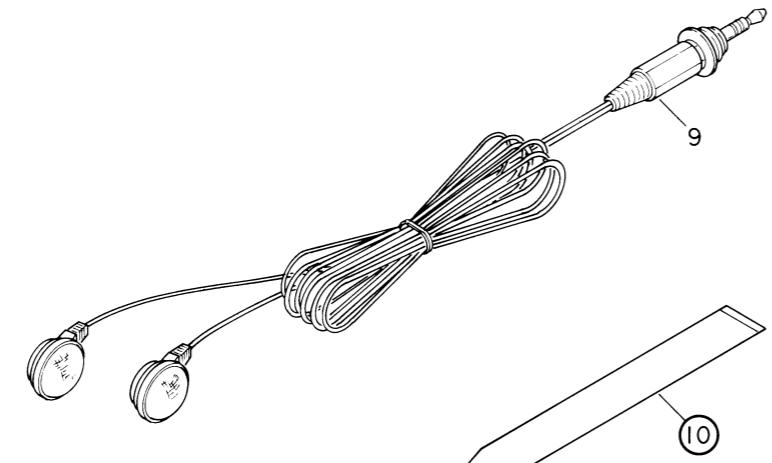


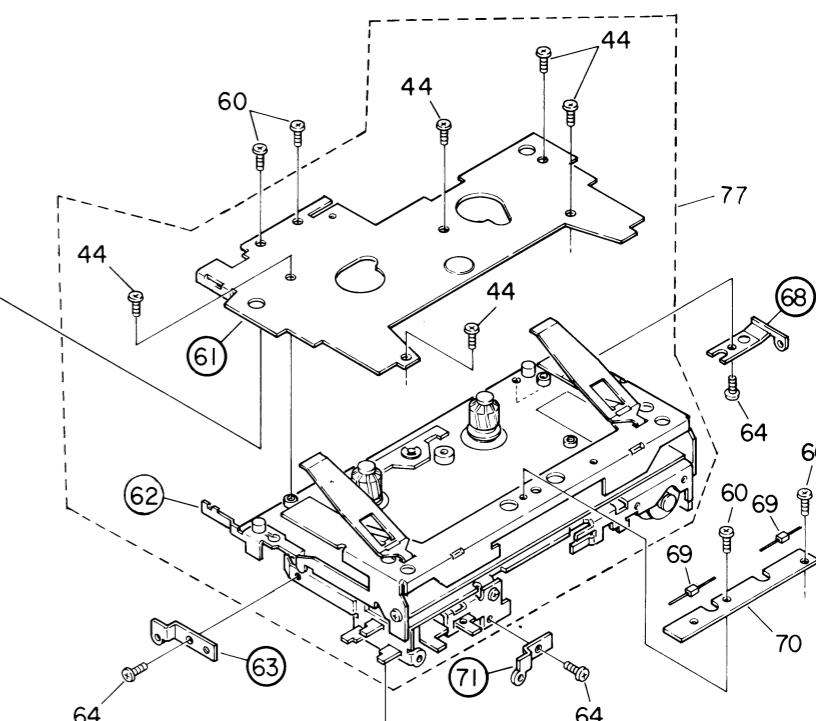
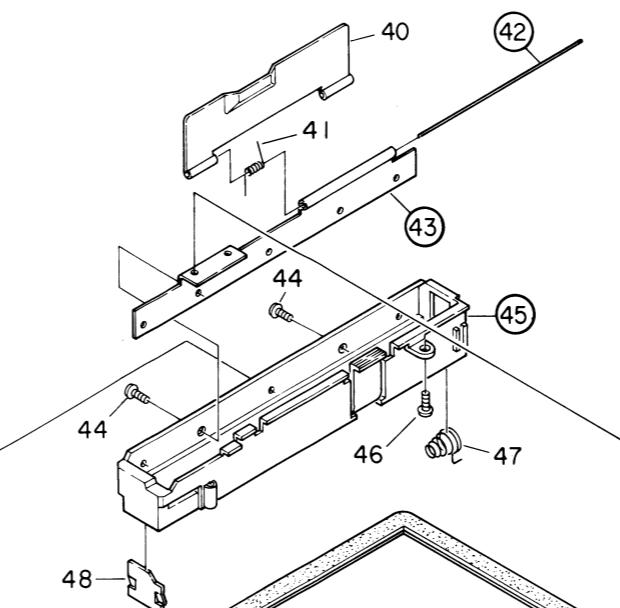
Fig. 12

7. CHASSIS EXPLODED VIEW

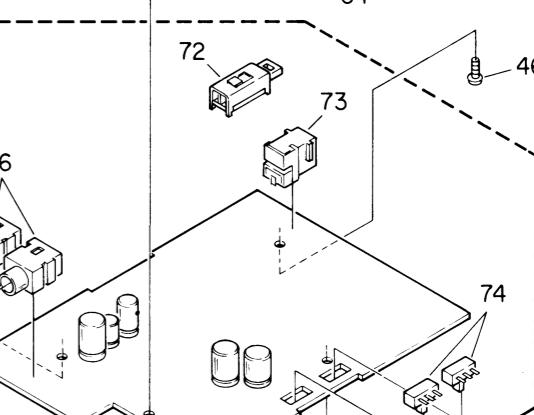
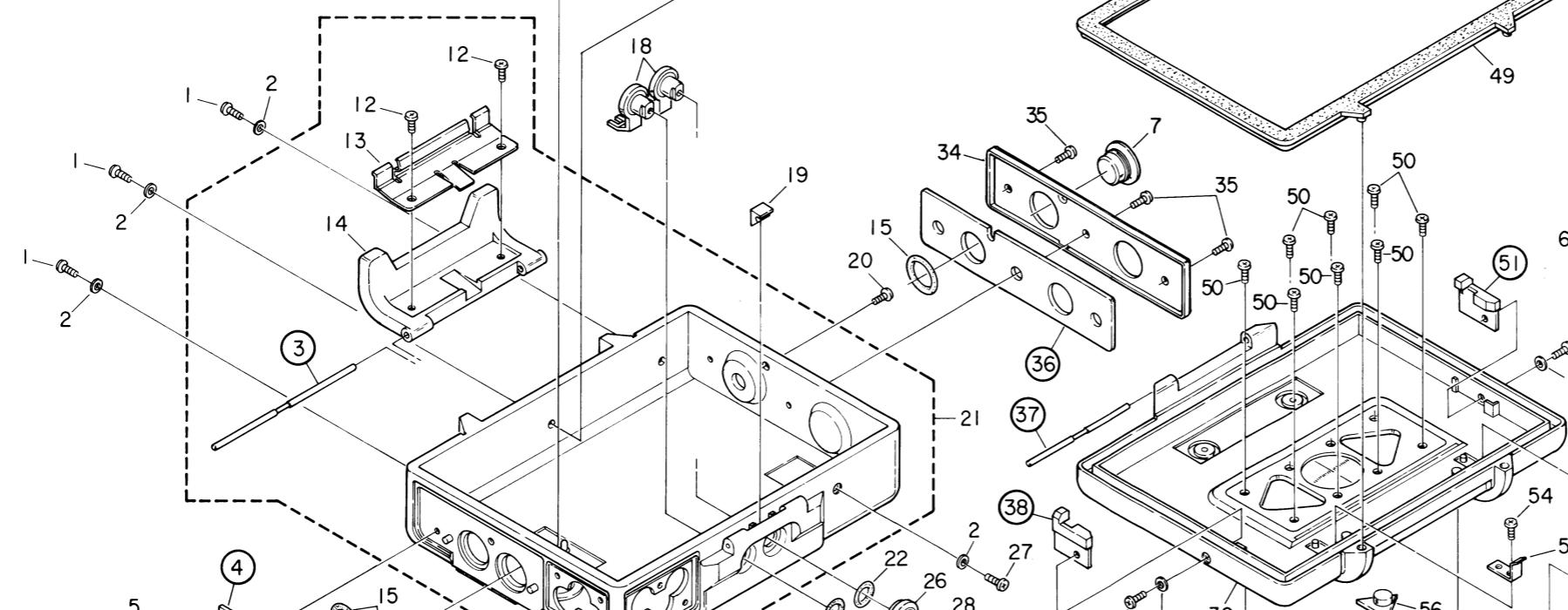
A



B



C



D

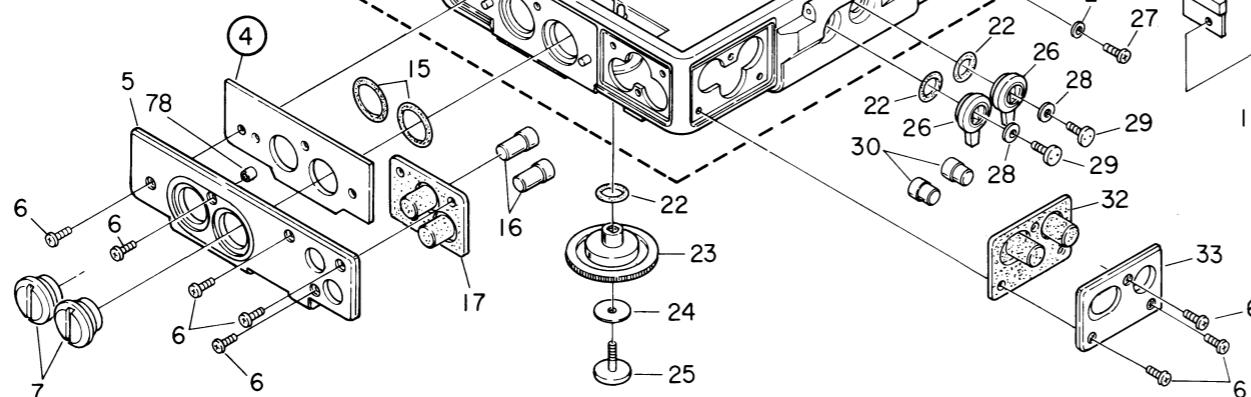


Fig. 13

● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	HBA-422	Screw M1.7 x 4.5		39.	HXB-325	Door Unit (PK-5AW (SV))
	2.	HBF-184	Washer		40.	HXB-295	Door Unit (PK-5AW (YL))
	3.		Shaft		41.	HNC-930	Cover
	4.		Bracket		42.	HBH-542	Spring
	5.	HNS-729	Escutcheon (PK-5AW (SV))		43.		Shaft
					44.	HBA-198	Bracket
					45.		Screw M1.7 x 2
							Battery Case
					46.	HBA-165	Screw M1.7 x 3
					47.	HBH-543	Spring
					48.	HBL-217	Terminal
★ ★	11.	HCS-185	P.C. Board		49.	HNV-768	Packing (PK-5AW (SV))
	12.	HBA-339	Volume			HNV-782	Packing (PK-5AW (YL))
	13.	HNC-936	Screw		50.	HBA-262	Screw M1.7 x 3.5
	14.	HNS-731	Bracket		51.		Arm
			Hook		52.	VACANT	---
	15.	HNV-776	O ring		53.		Cover
★	16.	HAC-363	Dummy Button		54.	HBA-400	Screw M1.7 x 2.5
★	17.	HNV-772	Button		55.	HBL-214	Spring
	18.	HNV-774	Lever		56.	HNV-794	Bush
	19.	HNV-779	Collar		★ 57.	HNV-770	Button
	20.	HBA-355	Screw M1.7 x 3		58.	HXB-296	Cover Unit (PK-5AW (SV))
	21.	HXB-328	Case Unit (PK-5AW (SV))			HXB-322	Cover Unit (PK-5AW (YL))
		HXB-321	Case Unit (PK-5AW (YL))				
	22.	HNV-775	O ring		59.		Bracket
★	23.	HAA-239	Knob (VOLUME)		60.	HBA-159	Screw M1.7 x 1.6
	24.	HBF-183	Washer		61.		Cover
	25.	HBA-333	Screw		62.		Cassette Mechanism Unit
★	26.	HAC-365	Knob (TAPE, DOLBY NR)		63.		Bracket
	27.	HBA-425	Screw M1.7 x 6		64.	HBA-257	Screw M1.7 x 2
	28.	HBF-182	Washer		65.	VACANT	---
	29.	HBA-332	Screw		66.	HKN-167	Jack (PHONES)
★	30.	HAC-364	Dummy Button		67.	VACANT	---
	31.	VACANT	---		68.		Bracket
★	32.	HNV-773	Button		★ 69.	PR2222S	LED
	33.	HNS-761	Escutcheon (PK-5AW (SV))		70.	HNP-548	P.C. Board
					71.		Bracket
				★ ★ 72.	HSH-154	Switch (PROGRAM)	
	34.	HNS-730	Escutcheon (PK-5AW (YL))		73.	HKN-142	Jack (DC IN)
					★ ★ 74.	HSH-156	Switch (TAPE, DOLBY NR)
					75.	HWK-240	Amp Unit
	35.	HNS-841	Escutcheon (PK-5AW (SV))		76.		Shield
					77.	HXB-301	Cassette Mechanism Assy
	36.	HNS-840	Escutcheon (PK-5AW (YL))		78.	HNV-817	Bush
	37.	HBA-358	Screw M1.7 x 4.5				
			Bracket				
	38.		Shaft				
			Arm				

8. CASSETTE MECHANISM EXPLODED VIEW

● Parts List

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1.	HBA-163	Screw M1.7 x 2.5		46.	HBH-524	Spring
★★	2.	HSN-146	Switch (FF/REW, POWER)		47.	HNC-909	Lever (PROGRAM)
	3.		P.C. Board		48.	HBH-516	Spring
	4.	VACANT	---		49.	HLA-509	Collar
	5.	VACANT	---		50.		Arm Unit (STOP)
★★	6.	HXB-257	Reel Unit		51.		Arm Unit (PLAY)
★★	7.	HXB-256	Reel Unit		52.	HBH-530	Spring
	8.	HXB-276	Pulley Unit		53.	HBH-534	Spring
	9.	HBF-117	Washer		54.	HBH-533	Spring
	10.	HBF-181	Washer	★★	55.	HXB-263	Pinch Roller Unit
	11.	HNV-760	Gear		56.	HNC-903	Arm
	12.	HBF-180	Washer		57.	VACANT	---
	13.	HBF-179	Washer		58.	HLA-508	Screw
	14.	HNV-758	Gear	★★	59.	HPB-204	Head
	15.	HBF-145	Washer		60.	HBH-529	Spring
★★	16.	HNT-158	Belt		61.	HBA-175	Screw M2 x 2.5
	17.	VACANT	---		62.	HNC-905	Clamper
	18.	HBA-160	Screw M1.7 x 1.8		63.	HNC-902	Spacer
	19.	HBH-549	Spring		64.	HNC-904	Arm
	20.		Holder Unit		65.	HXB-267	Arm Unit
	21.	VACANT	---	★★	66.	HXB-264	Pinch Roller Unit
	22.	VACANT	---		67.	HNV-759	Gear
	23.		Chassis Unit		68.	HNC-906	Lever (STOP)
	24.	HXB-258	Gear Unit		69.	VACANT	---
	25.	VACANT	---		70.	VACANT	---
	26.	HBH-520	Spring		71.	VACANT	---
	27.	HBH-522	Spring		72.	HXB-262	Flywheel Unit
	28.	HBH-519	Spring		73.	HBA-154	Screw M1.4 x 3
	29.	HXB-259	Gear Unit		74.	HBE-129	Washer
	30.	HXB-261	Flywheel Unit		75.	HNR-191	Ball
★★	31.	HXM-302	Motor		76.	HBH-515	Spring
	32.		Lever		77.	HNV-761	Guide
	33.	CBG-005	Washer		78.	VACANT	---
	34.	HLA-507	Collar		79.	HBA-165	Screw M1.7 x 3
	35.	HBA-205	Screw M1.7 x 4.5		80.	HBH-532	Spring
	36.	HNT-141	Bush		81.	HBH-535	Spring
	37.	HBA-168	Screw M1.7 x 4.5		82.	HXB-269	Lever Unit (PLAY)
	38.	HXP-112	Solenoid		83.	HXB-266	Holder Unit
	39.	YE12FUC	Washer		84.	HBH-528	Spring
	40.	HBF-187	Washer		85.		Lever
	41.	HNV-762	Arm		86.	HBH-521	Spring
	42.	HBH-522	Spring		87.	HXB-275	Arm Unit
	43.	HNC-908	Lever		88.	VACANT	---
	44.	HBH-526	Spring		89.	VACANT	---
	45.	YE15FUC	Washer		90.	HLA-510	Shaft

1

2

3

4

5

6

• Cassette Mechanism

A

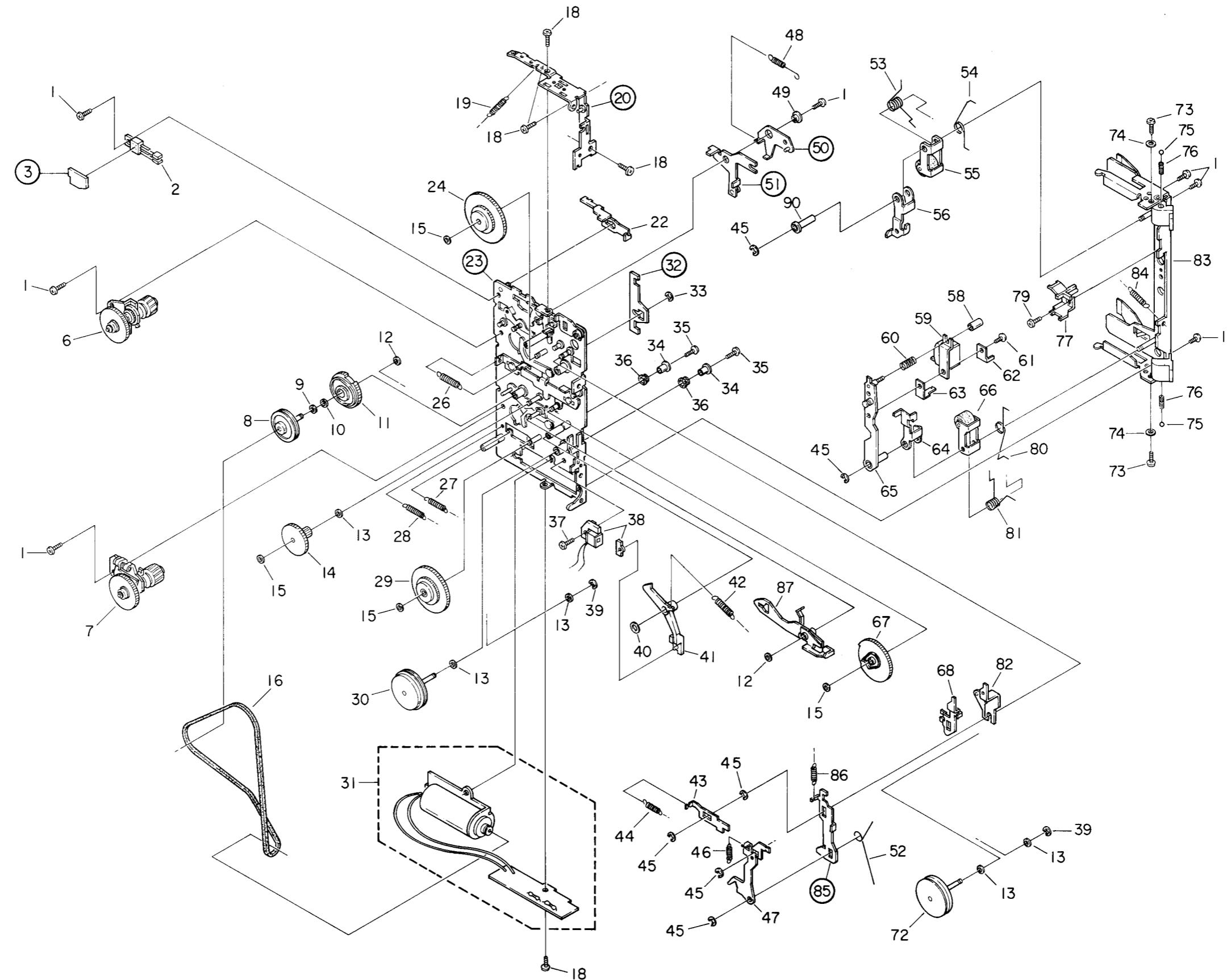


Fig. 14

1

2

3

4

5

6

9. ELECTRICAL PARTS LIST

NOTE:

When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex. 1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J = 5%, and K = 10%).

560Ω	56 × 10 ¹	561	RD1/4PS	5 6 1 J
47kΩ	47 × 10 ³	473	RD1/4PS	4 7 3 J
0.5Ω	0R5	RN2H	0 0 5 K	
1Ω	010	RS1P	0 1 0 K	

Ex. 2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62kΩ	562 × 10 ¹	RN1/4SR	5 6 2 1 F
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- For your parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.

★★: GENERALLY MOVES FASTER THAN ★.

This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.

- Parts whose parts numbers are omitted are subject to being not supplied.

Amp Unit (HWK-240)

MISCELLANEOUS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
★★ IC1	BAF3304	C107, C108, C201, C202	★★ S1	LED	PR2222S
★★ IC2	HA12048FP	Chip Capacitor	★★ S1	Switch (FF/REW, POWER)	HSN-146
★★ IC3	TA7688F	C109, C110, C113, C114, C129 – C132	★★ HD1	Head	HPB-204
★★ Q1, Q2, Q9	2SD1012	C111, C112 Chip Capacitor	★★ M	Motor	HXM-302
★★ Q3, Q4, Q6 – Q8	2SC2458 or 2SC536P	C115, C116, C203 Chip Capacitor	SO	Solenoid	HXP-112
★★ Q5, Q10	2SA1048 or 2SA608SP	C117, C118			
★ D1, D2	1SS133 or 1SS176	C119, C120 Chip Capacitor			
★★ S101	Switch (PROGRAM)	CEA010M50LS			
★★ S102, S103	Switch (DOLBY NR, HSH-156 TAPE SELECT)	CEA2R2M35LS			
★★ VR101, VR102	Semi-fixed, 50kΩ (B) HCP-142	CEAR22M50LS			
		CEAR68M50LS			
		C121, C122, C207			
		CEA221M4LL			
		CEA220M4LS or C123, C124			
		CEA220M6R3LS			
		C125, C126			
		C127, C128			
		CQMA333J50L			
		C133, C134 Chip Capacitor			
		CEA100M6R3LS			
		CEA470M4LL			
		C135, C136 0.1μF			
		CCG-093 or CKDBC104M25			
		C137, C138, C147			
		CEA220M4LS or C140, C142, C145, C148			
		CEA220M6R3LS			
		C141, C209			
		C143			

CHIP RESISTORS

Mark	Symbol & Description	Part No.	Mark	Symbol & Description	Part No.
R101 – R130, R133 – R137, R200 – R209, R211 – R220	RS1/8S□□□J	C144			CSZA220M3R15
R131, R132, R138 – R199, R210	VACANT	C146			CEA101M4LL
		C149, C150	★★	Chip Capacitor	CKSYF104Z25
		C151 – C200			VACANT
		C204, C205			CEA0R1M50LS
		C206, C208			CEA4R7M16LS

CAPACITORS

Mark	Symbol & Description	Part No.
C101 – C104	Chip Capacitor	CKSYB561K50
C105, C106, C139		CEA470M4LS or CEA470M6R3LS

Volume Unit

Mark	Symbol & Description	Part No.
★★ VR501	Volume, 20kΩ (A)	HCS-185

Miscellaneous Parts List

Mark	Symbol & Description	Part No.
★ D501, D502	LED	PR2222S
★★ S1	Switch (FF/REW, POWER)	HSN-146
★★ HD1	Head	HPB-204
★★ M	Motor	HXM-302
SO	Solenoid	HXP-112